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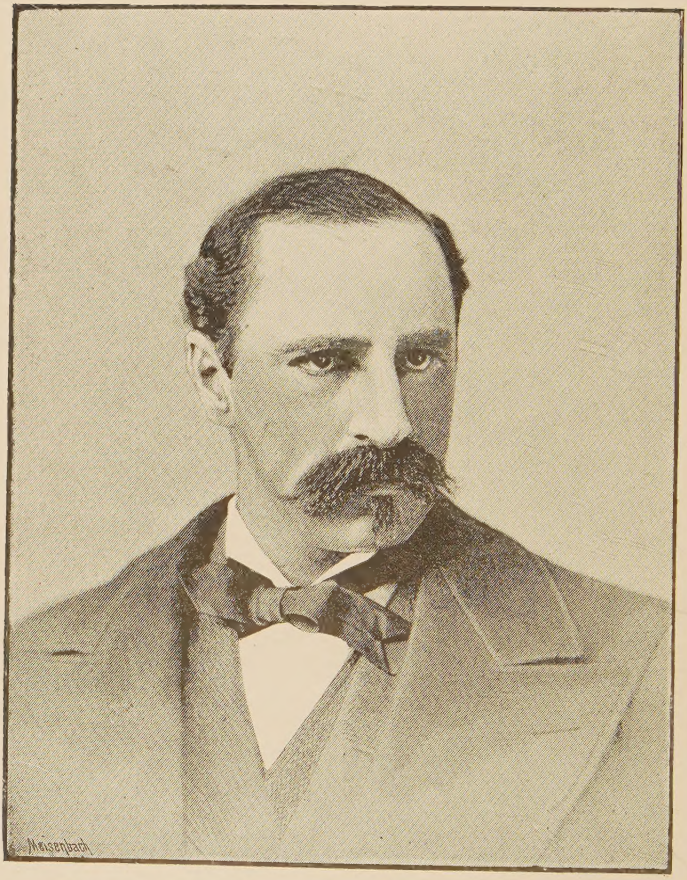

Alex. Del Mar

THE SCIENCE OF MONEY.

BY

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PREFACE.

IN the author's "History of the Precious Metals" it was shown from personal observations and practical tests made in the principal mining districts of California, Australia, Nevada, and other countries, where mining for these metals had been conducted by free labourers and under economical conditions, that the present value of these metals was far less than the average cost of their production; and that mining for them was kept up, not because of any proofs that it was remunerative, but in consequence of the gambling character of the pursuit and the hope entertained by each adventurer that his mine would prove a fortunate exception to the rest.

Upon looking for the circumstances which had originally determined the present value of the precious metals, such circumstances were found in the military conquests, the rapine, and the slavery by which, previous to 1849, the European world had usually obtained them—chiefly by the Spanish conquest of America, the cruel consignment of its aboriginal inhabitants to the mines of Mexico and Peru, and the capture of Spanish plate ships by British, Dutch, and French privateers.[1] These circumstances were regarded

[1] The precious metals became so plentiful in Europe that the dukes of Alva and Medini Cœli were enabled to possess from twelve to four-

as continuing to have the most important bearing upon the value of the precious metals until the Mexican and Peruvian races were exterminated,[1] and the Spanish Encomienda system failed; events which occurred towards the end of the seventeenth century.[2]

That, upon the happening of these events and the falling-off of supplies from the mines, the existing level of prices —and therefore the economic under-valuation of gold and silver—was maintained in the various countries of Europe and America by paper notes, authorised by governments

teen hundred dozen silver plates each, besides dishes and other vessels to match; and the Marquis Trevain proposed that France should abjure the use of the precious metals for money, and adopt, instead, coins of iron.

[1] Most of the present survivors of these races are of mixed breed.

[2] Another circumstance, and one which has hitherto escaped the notice of historians, occurred at about the same time, with important results in this connection. The conquest of America gave rise to mining excitements in Europe which culminated in the reopening of nearly every abandoned mine on the Continent. Lord Bacon engaged in a gold mining enterprise in England; gold mines were opened in Ireland, France, Germany, Austria, Switzerland, Italy, Turkey, Portugal, and Spain. In the last-named country vast alluvions which existed in Asturias, Leon, Gallicia, and Lugo, and which the Romans had thoroughly washed, were again worked by the deluded gold-seekers. The author has visited all these localities, and speaks from personal observation when he declares that, except in a very few and remote localities, these placers are substantially exhausted, and will not pay to work even by the devastating "hydraulic" process. Although the product of the Continental mines (by no means inconsiderable) was gained at a loss, it entered the exchanges of Europe at the same value as the stolen treasures of America. A similar, though less notable, revival of mining in Europe took place after the opening of California and Australia.

and issued by banks, who owed this extraordinary privilege to the general dread of a fall of prices.[1]

That, toward the close of the eighteenth century, the scarcity of money (at the customary levels of prices in each country) was marked by the use of clipped coins of ante-revolutionary and of inconvertible notes of revolutionary date;[2] that this scarcity was intensified by the Spanish American revolutions of 1810 and the closure of the mines of Mexico and South America; and that these events gave rise to that great extension of "convertible" bank paper-notes which marked the era of 1797-1821.

Before 1825, when peace was restored and mining resumed in Spanish America, the industries and commerce of the world, adventitiously freed for a time from the limitations of mining, had grown to such dimensions that either the bank emissions had to be permitted further enlargement, or the level of prices in each country subjected to a calamitous fall. Not without many efforts to limit the volume of bank paper, all of which ended in prolonged and

[1] Montesquieu, who clearly perceived that the gold and silver of Spanish America had entered into the exchanges of Europe at a value greatly beneath the cost of producing these metals under economical conditions, thus alludes, in 1748, to the agencies that were at work to keep that value down: "The companies and banks established in various countries have maintained the under-valuation of gold and silver as equivalents for property; for by new devices (paper notes) they have so greatly magnified the size of the measure of value that gold and silver (coins), now exercising only part of the office of such measure, have become less valuable than before."—"Esprit des Lois," xxi. 22.

[2] Alluding to the American Revolution which occurred in 1775, and the French Revolution which occurred in 1789.

dangerous commercial crises, the various governments of Europe and America allowed these emissions to increase, until about 1852-5, when the amplitude of the Californian and Australian product of gold afforded a favourable opportunity to improve the solvency of the banks. Efforts to curtail their emissions met with less success, and these continued to augment at nearly as rapid a rate as before, and have so continued up to the present time; thus maintaining the under-valuation of the precious metals, and postponing to a distant and uncertain era the restoration of their value to the cost of their economical production.

Finally, it was shown that since the exhaustion of the principal placer mines of California and Australia, and the phenomenal rock mines of the Comstock Lode, the annual supplies of the precious metals had steadily diminished;[1] that in all probability, they would continue to still further diminish;[2] and that with this dwindling of the basis of convertible paper systems their further extension must be regarded as substantially impracticable.

In the author's "History of Money in Ancient Countries" it was shown that—although upon a less extended field—all the difficulties which the modern world has experienced in

[1] A further cause of diminished supplies has since been furnished by the Courts of California and of the United States which have forbidden hydraulic or placer mining upon navigable streams, or their affluents.

[2] The soundness of this opinion has since been confirmed by the Right Hon. G. J. Goschen, formerly Chancellor of the Exchequer, by Mr. Lock, in his voluminous work on "Gold," and by numerous other writers on the subject.

trying to make commerce and industry conform to the limitations of gold, silver, or copper mining, had previously been encountered by the ancient world, many of whose nations had at one time or another discarded the use of the precious metals for monetary symbols and adopted regulated or numerical systems of money. The most notable of these experiments were tried in China, India, Greece, and Rome.

In the "History of Money in Modern Countries,"[1] numerous other experiments of similar character are described.

The present work is an arrangement and elaboration of the principles which appear to have been established by these experiments, and which together should form all that we have a right to call the science of money. No attempt has been made to apply these principles to the present circumstances of nations: this being an effort which the author reserves for a future and final work on the subject: "The Politics of Money."

Should the author's conclusions with reference to the actual dwindling supplies of the precious metals, and the difficulty of further extending convertible paper systems, obtain general acquiescence, the present work may have a widely-extended and immediate usefulness; and even should his opinions on these subjects not obtain acceptance, the science of money will hardly fail to interest alike the merchant, the jurist, the statesman, and the student of history.

[1] This work is completed, and will soon be in press.

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THE SCIENCE OF MONEY.

CHAPTER I.

THE UNIT OF MONEY IS ALL MONEY.

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MONEY, as a generic term for the common means of payment, the medium of exchange, the unit or measure of value, the expression of price, the Thing in the fractions of which either law or custom makes taxes, fines, debts, services, or exchanges, payable, was first used—that is, the *word* was first used—towards the end of the third century before Christ.

What we now call money was named by the ancient Hindoos "cash," from *karshápana*, a coin; by the archaic Romans "aes," meaning bronze, which was the material of

their coins; by the Greeks "nomisma," meaning numbers; and by the Romans of the Commonwealth "nummus," from the Greek nomos and nomisma.

In the year B.C. 273, the Romans, in gratitude to the goddess Juno, for an alleged timely warning which saved them from defeat in battle, surnamed her Moneta—from monere, to warn, and erected a temple in her honour which they called by her new name. Soon after, when the spoil of Tarentum was carried to Rome, this building was used as a mint, and its productions came to take the name of "moneta.[1]"

It appears probable that moneta was at first used only in a collective sense, meaning all money, or the numerical sum of the entire coinage. This was certainly the meaning originally attached to nomisma, which was the predecessor of the word moneta. This meaning of money—namely, all money, or the whole sum or numbers of money within a given legal jurisdiction or a given country—will herein be distinguished as the Classical.

Later on, that is to say during the Roman imperial era, the term money was applied to any considerable portion of the coinage, and still later to smaller portions; but not yet to a single coin.

During that lingering decay of the social fabric which

[1] From these circumstances it follows that the use of the term money with reference to any period previous to the dates referred to is an anachronism. Such an instance occurs in the English translation of Genesis, when Abraham is said to have paid for Sarah's grave "four hundred shekels of silver, current money with the merchant." (Gen. xxiii. 9, 13, 16).

followed the downfall of liberty in Rome, every combination, both of things and ideas, gradually resolved itself into its original elements. This means of warding off impending dissolution Nature offers not only to composite things and ideas, but also to words. Isolation affords a refuge from which social existence may again emerge. The shattered trunk of a tree may survive after its branches and fruit are destroyed.

The Roman Empire split into two, then into many fragments, each of which was called a kingdom. In the course of time these kingdoms became divided into countships or dukedoms, and the latter subdivided into still smaller realms. Every institution which was composed of a plurality of men or things fell to pieces in a similar way. The senate perished, the tribunals of justice disappeared, the corporations or *collegii* vanished, the use of annuities and life tables was forgotten, the census fell into oblivion, even the organization of armies ceased; and counts and kings alike decided their quarrels by single combat.

Everything of a joint ownership, as a public road, an aqueduct, or a water-ditch, everything of a composite structure, from a sailing ship down to a piece of paper, every art which depended upon the association of labour, from the representation of a drama down to the blowing of glass, was lost.

The same course of disintegration attended the history of institutions, of ideas, of thoughts. The world, the commonwealth, the republic, the nation, the social state, the people, public opinion, commerce, credit, society—all

these were ideas or institutions known to the Greeks and Romans in the widest sense. Says Pliny, "I do not suppose that the land is actually wanting, or that the earth has not the form of a globe; but that on each side the uninhabitable parts have not been discovered"[1]. In the Dark Ages the world had dwindled to little beyond the compass of southern and western Europe; the commonwealth was the duke's courtyard; and as for the social state, public opinion, commerce and credit, these things died out entirely.

Words followed a similar process of decomposition. Their meanings gradually contracted, so that from embracing composite and collected ideas, they came to have only simple and single ones. They degenerated from forcible to weak; from grand to petty. Many of the words were lost altogether. During the Renaissance which followed the Dark Ages, a few of them revived, to puzzle the modern philologist with their successive diminuendo and crescendo gamuts of meanings. Among these was money.

The descent of the word money from its original meaning of the whole numbers of the medium of exchange, or the whole coinage, to the feudal meaning of a single coin, piece, or fraction of the unit of value, is clearly traceable in words

[1] "Natural Hist.," Bohn's ed., ii. 112. Pliny also quotes Eratosthenes and Hipparchus, both of whom knew, not only that the earth was a sphere, they had even computed its circumference; the former at 252,000 stadii, the latter at 277,000. The rotundity of the earth had long previously been proved by Thales, B.C. 636.

still extant.[1] There was a time, indeed, when its use expired altogether, and *species* in one country, *argent* in another, took its place.[2]

It was at this period, when every one of its constituent parts was on the point of dissolution, that the social fabric of Europe suddenly revived. Mahomet arose in Asia; the route to the Orient was reopened; the restorative of commerce was offered to a continent where manufactures had become unknown and agriculture was on the verge of extinction; and organized society—at first in Italy, afterwards elsewhere—began to evolve itself anew out of the moribund and disintegrating social elements known to us as Feudalism. Then followed the Crusades, the reconstruction of armies, of kingdoms, of states, and of legal tribunals; and the re-discovery of old truths and inventions, such as the rotundity of the earth,[3] sailing ships, glass and paper,

[1] Consult the use of the words nomisma in Aristotle and Plato; moneta in Cicero and Pliny; moneta in the Essays on Money, edited by Budelius; and moneta in Du Cange's copious Glossary.

[2] There is a parallelism in the decay and subsequent revival of the conception of money and the arts of music and poetry. During the Dark Ages the ancient art of music was lost, and poetry, which in the classical ages went by numbers, now went by accent. This was common to modern Greek and all the languages which sprang from or passed through the Dark Ages.—Leake's "Topography of Athens," lxxxiii. London, 1821, 8vo.

[3] About A.D. 813-33, Almamon, Caliph of Bagdad, caused a degree of the meridian to be measured. During the early part of the 11th century Ben Mahomed Edrisi presented to Roger II. of Sicily a silver globe representing the earth. During the early part of the fifteenth century, Olou-beg, successor to Tamerlane, made a measurement of the earth.—(Voltaire, General History, i. 32; ii. 2, 45). A plani-

together with some new ones, as gunpowder and printing. Finally came a resuscitation of old words, among them "money;" but money shorn of its ancient meaning, money no longer meaning the whole of the unit of value, money meaning only what it meant previous to its entire verbal disuse—a fraction of such unit, a single coin. The plural of this word, meaning a number of coins, a term no longer in common use, was "moneys."

From this Dark Age sprang the Common Law of England, and the American law, and the law of other modern modern nations. In these laws money is still alluded to as a single coin. The unit of value, says the law of the United States of America, is one dollar; and this is further described in the same law as a piece of coined metal weighing so many grains.

Shortly after the time when the discovery of America had added the plunder of a new continent to the, as yet, meagre resources of Europe, certain jurisconsults and writers who were conversant with the Roman civil law, as those quoted by Budelius and Sir Matthew Hale, evinced an acquaintance with the ancient meaning of money; but the common custom of the period, as shown in Italian economical works of the sixteenth and the English works of the sixteenth and seventeenth centuries, was to use the

sphere, or map of the world, showing the Cape of Good Hope, was delineated in the convent of Murano at Venice in 1459, thirty-seven years before Vasco de Gama's voyage. A *fac simile* of this work is now in the British Museum. See Gibbon's Essay and Dean Vincent's Notes on the Meridional Line in Gibbon's Essays, pp. 499, 511, 4to. edition.

word money in two senses: first, that of a number of coins; second, that of the whole quantity, not number, of pieces of the coinage. This last-named meaning which the word money acquired after its entire disuse during the Dark Ages, and its subsequent resuscitation, is traceable back to the period of the Renaissance; and in order to distinguish it from the other meanings, it has been herein called the Renascent.

So long as money was made exclusively of metal coins, no difficulty presented itself in reasoning from the Renascent meaning of money; and since it was during this period that the foundations of the present science of political economy were laid,[1] it was the Renascent meaning that money acquired in the works of Joseph Harris and Adam Smith, and those who followed them. Paper money, beyond the phase of deposit-notes, was scarcely known when the earlier of these economists wrote; and as for those of a later date, though many have attacked and weakened the great Scotch sophist, none have had the genius or good fortune to overthrow him.

But since the era of the economists—since the time of Smith—money has come to be largely made of both metal and paper; and as it is physically impossible to express in one sum the total numbers of gold, silver, copper, and paper pieces, or fractions of money,[2] the silver and copper pieces,

[1] John Botero's works were published about 1590; Joseph Harris's Treatise on Money, in 1757.

[2] The numbers of two or more unlike things cannot be added together into a sum of either one of them. A pound of fish and a

formerly full legal tenders, have been demonetized, or partly demonetized, in law, and have been conveniently omitted from definition and argument;[1] whilst the fiction has been invented that all paper constituents of money involve fulfillable promises, written or implied, to be exchanged for gold coins of like denomination. When these subterfuges have been overthrown, the economical sophisms built upon the Renascent sense of money have resisted demolition by hiding themselves behind the ambiguous term "currency."

Thus we have three distinct meanings for money:—

1. The Classical: The whole numbers of money; the whole number of pieces or fractions of like denomination which the law permits to be used for payments—no matter of what material they are composed.

2. The Feudal: A coin; plural, moneys, meaning several or many coins.

3. The Renascent: The whole quantity of material—gold or silver—of which full legal-tender coins are made, and in which all paper notes are expressly or impliedly redeemable—plus the quantity of bullion available for

pound of flesh cannot make two pounds of either fish or flesh. A dollar coin cannot be added to a paper dollar and make a sum of two coin dollars, or two paper ones.

[1] For example, in answer to the self-proposed question, "What is a pound?" (meaning a pound sterling) Sir Robert Peel, in 1844, said 123.275 grains of gold $\frac{11}{12}$ths fine. In this definition the silver, copper, and paper pounds which circulated at the time are left out of view. Sir Robert stated what a gold pound was, but not what either one of the other pounds were; and his answer is therefore incomplete.

coinage, under what is known as "free" or "open coinage" laws.

With a view to determine the bearing which these varied meanings of money would have in practice, let it be supposed that the question were asked, "Of what does the unit of value in the United States consist?" The answers would be as follows:—

The Feudal Answer: A gold coin legally called a dollar, weighing so many grains. This coin is the unit of value. See Revised Statutes of the United States, Section 3511.

The Renascent Answer: So many tons of gold coined into so many million pieces, each of so many grains, legally called dollars—plus so many tons of uncoined gold bullion ready to be coined into similar pieces, free of seignorage, under Section 3524 of the Revised Statutes. The sum of this quantity is the unit of value. See Adam Smith and John Stuart Mill on Money.

The Classical Answer: There are many pieces of gold, silver, nickel, copper, and paper—no matter of what weight or size—legally called dollars. The sum of their numbers is the unit of value.

It is evident that no succinct, no practical discussion of money can be conducted until a choice is made between these three different meanings of the term. For example, Mr. John Stuart Mill, the most eminent of modern economists, holds in one place that "the value of money varies inversely as its quantity." This rule is true of commodities; it is also true of money when money means num-

bers; but it is not true of money when money means quantity. The proof of this appears in a previous paragraph of Mr. Mill's work, where he holds that the total sum of money—no matter howsoever great or small it may be—will always have the same value.[1] This rule, so contradictory of the other, is true of money when money means quantity; but it is not true of money when money means numbers.

Bearing in mind Mr. Mill's great penetration and logical faculty, it is evident that he has fallen into this contradiction through the subtle error of employing the term money in two different senses. It is quite plain that in the first example he means by money the total numbers of money; and in the second, the total quantity.

To avoid a similar mistake, and until a rightful meaning of the term is acquired by familiarity with the nature and function of money, the sense in which it is used in this treatise will be plainly expressed or implied in each instance.

When its nature is well understood it will be perceived that money is a Collective Unit or Thing; and that it is impossible to give it a precise or specific name unless such name has the meaning that it is believed belonged to nomisma—namely, all money, or the whole sum of numbers of money in a given country, or within a given legal jurisdiction.

When used with reference to all the world, money means

[1] Mill's "Political Economy," iii.-viii. 2, p. 299—from Adam Smith, Book I., chap. ii. p. 178.

—and must of necessity mean—all the money in the world. Therefore, teleologically, money, or, what is the same thing, the unit of money, is all money; and the term should not be used in any other sense. Nevertheless, so long as the various countries of the world employ different monetary systems, and each system consists of different kinds of moneys—that is to say, moneys having different legal attributes, as is the case now—it becomes necessary, unless new and strange terms are introduced, to employ the word money to mean sometimes all the money in the world, sometimes all the money of a given country and sometimes all the money of one class—as commodity money, numerical money, etc.; whilst the word moneys will have to be used to mean sometimes two or more systems of money, at others two or more classes of money. The intelligence of the reader will doubtless guide him to the sense in which this, at present, ambiguous term is employed in the various parts of this work.[1]

[1] The use of the word money in the sense of a single piece or fraction of money has been avoided as far as possible; but in some places it was found inconvenient to do so without resort to tedious circumlocution. One striking fact asserts itself at the outset of this inquiry into the principles of money: if the unit of money is all money—and there can be no doubt that this is true—it follows that our knowledge of money, its composition, dimensions, distribution, operation, etc., must be derived from other sources than visual knowledge. We may, indeed, perceive a fraction of money, as a coin, a note, etc., but we cannot see all money. We must, therefore, consult the laws and customs of money for a knowledge of it; and since these laws and customs are exceedingly numerous and intricate, and are entwined with other laws and customs, and much affected by their operation, we find that money

is something more than a mere instrument—it is an institution. No individual can make it, or a duplicate of it, as one can a pint pot or a yard stick. It has to be established and maintained by society at large. Nor may this establishment be arbitrary. It must be designed with respect to the other social and commercial arrangements already in existence, and liable to be affected by its operation.

CHAPTER II.

CLASSIFICATION OF MONEYS.

Moneys are of great variety, needing classification—Moneys are legal institutions—Moneys of unlimited and limited volumes—Commodity, convertible, inconvertible, and composite moneys—Various classes of commodity moneys—Living moneys—Merchandise moneys—Metallic moneys—Their variety chiefly due to limitation of coinage, to seignorage, and to legal-tender efficiency—Coins and bullion—Unlimited paper moneys—Their varieties—Composite moneys—These are the kind employed by the leading nations of the modern world—Limited moneys. These were the kind employed in various countries of the ancient world.

NO single work nor class of works exist in which the principal different kinds of money adopted at various times by the nations of the world are mentioned, and in which their peculiarities and functions are accurately determined and described. The numismatic works are limited chiefly to the description and classification of coins; whilst the essays and treatises relating to moneys and "currencies" are usually theoretical works, in which a few facts, isolated from their congeners, are made to sustain a tottering burden of conclusions.

As yet the history of money lies scattered and hidden in the chronicles of law, religion, slavery, wars, natural philosophy, mining, metallurgy and archæology. If these be investigated with attention, it will appear that several

hundred distinct classes of moneys have been used from time to time by various peoples and nations; while to speak of money is usually to speak of only one of these numerous classes.

In order to avoid the use of a terminology whose looseness and vagueness would destroy the claims of this work to practical value, it becomes necessary at the outset to classify moneys.

The palpable characteristic which distinguishes money from the numerous objects that resemble it, but which are not money, is its Mark of Authority, signifying that it is issued, circulated, and made payable for debts, services, fines, taxes, and commodities, by virtue of Law, or, as in some instances, general custom having the force of law.

There is also connected with this distinguishing mark the question of Artistic Design, and the bearing of the latter upon Counterfeiting and surreptitious issues.

The Mark of Authority has not always been affixed to money. Cattle, corn, cocoa-beans, metallic slugs and rings, and many other objects having no mark of authority whatever upon them, have served at various times, and amongst various peoples, for that measure of the exchangeable relations of other objects which is called money. Such instances, however, belong rather to undeveloped or decayed communities and to the earlier history of commercial intercourse than to peoples and a state of trade in which money plays an important part and becomes an institution of law.

From the earliest historical periods, money, amongst highly civilized and commercial communities, has had its

distinguishing mark and other and still more important attributes conferred upon it by law,[1] a fact, by the way, which appears to be strangely ignored by political economists. It is from the law, therefore, that these attributes are to be gathered. But herein, still more strangely, occurs an oversight more important than that committed by the economists.

The law in all instances—except in a few not yet well settled ones, to be mentioned in the course of this work—has omitted to describe or limit the Sum or Volume of money; an attribute, according to the economists, who on this point are incontestably sound, of the most essential consequence, because it determines the value of the whole, and consequently the value of each of the many pieces or fractions of which the whole money is composed.[2]

When the volume was undefined, and sometimes—as, for example, whenever the law defining the volume has been inoperative—in seeming defiance of the volume, the material of which moneys was composed has had the most important influence in determining their value and efficiency.

Lastly, the conditions of the production or emission of moneys, and the functions and privileges conferred or limitations affixed to them by law or custom (if any), all bear upon and serve to determine their value and efficiency.

[1] See "Institutes of Manou" (B.C. 1500 to 3100), viii., 151, quoted in the author's "History of Money," chapter on India.

[2] "As their mass increases their value diminishes."—Adam Smith, i. 178. "By limiting the quantity of coin, it can be raised to any conceivable value."—Ricardo, "Political Economy," chapter xxvi.

Guided by these various characteristics and attributes in classifying the different sorts of moneys, they appear to be divisible into the following genera, orders, classes, and groups. (See p. 17.)

It will be observed that the two great genera of moneys are:—

First, moneys of Unlimited or Unfixed volume.

Second, moneys of Specifically Limited or fixed volume.

The first of these genera, consisting of those moneys whose sum, volume, magnitude, or number of fractions is undefined or specifically unlimited in the law of the nation employing them, is divisible into four orders, as follows:—

Order I. *Commodity Moneys*, as slaves, cattle, corn, merchandise, metallic slugs, nonseignoried coins, seignoried coins, and coinable bullion—marked and unmarked; volume not fixed. The material of these moneys when used for moneys possess the same value—no more, no less—as when used for other purposes.[1]

[1] Seignoried coins usually form an exception to this rule, because they are usually issued within some sort of rude limit. When thus issued their value as coins may be as great and even greater than the metal of which they are composed, whilst they can never be reduced to metal again unless at a loss. When issued without limit, the value of the coins will conform to their numbers, and if the issues are continued, will eventually fall to that of the metal of which they are composed; a circumstance that would reduce them to the condition of commodities, and bring them within Order I. In such a condition of affairs the owners of bullion will refrain from offering it for coinage, as did the Spanish grandees of the sixteenth and the English nobles of the seventeenth centuries, a large portion of whose wealth was accumulated in the form of plate.

CLASSIFICATION OF THE ACTUAL MONEYS DESCRIBED IN THE AUTHOR'S "HISTORY OF MONEY."

Genera.	Orders.	Classes.	Groups.	Degree of Legal Tender.
Unlimited	I. Commodity	1. Living		Not known.
		2. Merchandise.		
		3. Non-seignoried coins	A. Unlimited coinage	Unlimited. / Special.
			B. Limited coinage	Unlimited. / Limited. / Special.
		4. Seignoried coins	A. Unlimited coinage	Unlimited. / Limited. / Special.
			B. Limited coinage	Unlimited. / Limited. / Special.
		5. Coinable bullion	Gratuitous coinage	Potential l. t.
	II. Convertible	1. Individual notes		Not l. t.
		2. Bank notes	A. Deposit notes	Not l. t. / Special.
			B. "Secured" notes	Not l. t. / Limited. / Unlimited.
			C. Unsecured notes	Not l. t. / Limited.
		3. Corporative notes	A. Deposit notes	Not l. t. / Special.
			B. "Secured" notes	Not l. t. / Limited. / Unlimited.
			C. Unsecured notes	Not l. t. / Limited.
		4. Communal notes	A. Deposit notes	Not l. t. / Limited. / Unlimited.
			B. "Secured" notes	Not l. t. / Limited. / Unlimited.
			C. Unsecured notes	Not l. t. / Limited.
		5. National notes	A. Deposit notes B. Treasury notes C. Exchequer notes	Unlimited.
			D. Funding notes E. Land notes F. Interest-bearing notes.	Limited. / Special.
	III. Inconvertible	1. Bank notes		Unlimited. / Limited. / Special.
		2. National notes	A. Treasury notes	Unlimited. / Limited. / Special.
			B. Interest-bearing notes	Unlimited. / Limited. / Special.
	IV. Composite			
Limited		1. Clay, glass, or porcelain. 2. Leather. 3. Metal 4. Paper		Unlimited.

Order II. *Convertible Moneys*, as individual, bank, corporative, communal, and national notes, promising to deliver some commodity or render some service; marked; volume not fixed. The material of which they are made possesses more value as money than for other purposes; such value varying with their character or that of the commodities or services represented or promised, and in the latter case varying still further with the credit of the issuers.

Order III. *Inconvertible Moneys*. Marked; volume unfixed, either through neglect or frequent or sudden changes in the law, or by their being rendered interchangeable with coins or other unlimited moneys, and thus merged into the whole mass of money. The French assignats and mandats, the American Colonial and Continental notes, the Confederate notes, the Italian corso forsali, the Brazilian notes, and numerous others, were of this order.

Order IV. *Composite Moneys*, composed of two or more of the previously named orders of moneys; marked and unmarked; volume not fixed. To this order belong nearly all the moneys of the world at the present time.

Descending now to the inferior attributes of moneys, it will be found that Commodity Moneys are further divisible into the following classes:—

Order I., Class 1. *Living Moneys*, as slaves or cattle. Slaves were used as money in Britain previous to the Norman invasion,[1] in America during the early portion of the Spanish Conquest and the Repartimiento system,[2] in

[1] Henry's "History of Britain," vol. iv., p. 243.

[2] Del Mar's "History of Precious Metals," p. 63.

Central Africa very recently,[1] and in most primitive as well as in most decaying communities. Cattle have been used as money in all early pastoral communities.

Order I., Class 2. *Merchandise Moneys,* as corn, fish, salt, furs, cloths, cocoa, tea, spirits, tobacco, soap, oil, &c. Corn was very extensively employed for this purpose in Europe during the Middle Ages.[2] Corn rents were paid in England so late as the reign of Elizabeth, in France down to the period of the Revolution, and in Germany during the present century.[3] In 1631 corn, at market prices, was a legal tender in Massachusetts; in 1732 it was legal tender in Maryland at 2*s.* 3*d.* per bushel; rice is still paid for rents in parts of India, China, and Japan;[4] and millet and dhoura in Nubia. Dried fish of some kind has been used as money in Iceland; dried codfish in Newfoundland; sealskins and fish blubber in Norway and Greenland; salt-bricks, at a rate equal to about 7½ pence in silver each, at Massouah in Abyssinia; and beaver-skins and other peltry in the North American Colonies. Silk cloth has been employed in China; linen cloth, at 3*s.* 6*d.* the yard, was used in Frankland (now comprised in North Carolina) in 1785; and cotton cloth is still used in some parts of Africa. Cocoa-beans constituted the principal money of the ancient Mexicans, and in some districts of their country was used by the

[1] Cameron's "Across Africa."

[2] United States "Congressional Record," April 24, 1876, Appendix, p. 70.

[3] Hodgkin's "Travels in North Germany."

[4] Del Mar's "History of Money," chapter on Japan.

Spaniards for a long time after the conquest. Traces of the custom prevailed so late as 1847, when the American army invaded Mexico. Brick tea is employed for money in Northern China; whisky was used, at 2*s.* 6*d.* the gallon, in Frankland in 1785 ; rum in Pennsylvania in 1790, and also during the present century in Australia; tobacco was legal tender in Virginia in 1635, and (at one penny a pound) in Maryland, 1732; soap was money at the Castle of Perote, Mexico, 1847; and quite recently olive-oil in the Ionian Islands.

Order I., Class 3. *Non-seignoried Coins.* Marked; volume not fixed. This class is divisible into Group A, unlimited coinage, and Group B, limited coinage. To the former group belong the gold coins of England, France, Germany, and the United States. So far as the law is concerned these coins are all unlimited legal tenders, but custom has often reduced them to special tenders. For example, from 1863 to 1878 the gold coins and silver dollars of the United States, varying in total sum from eighty-five to one hundred and fifty million dollars, though lawfully unlimited tenders for all purposes, were in fact never used except for the payment of customs duties and interest on the public debt.[1] The reason for this custom was that the greenback law of 1862 made treasury notes tenders for all purposes except the two named; and as these notes were issued in excess of the public requirement at the previously existing level of prices, the latter rose, in-

[1] A small sum was also employed in the State of California, whose Legislature nullified the greenback law of the United States.

cluding the price of gold and silver coins, which thus became worth a premium in greenbacks. After this the coins were only paid in cases where the law specifically demanded them. To Non-seignoried coins, Group B, belonged the American silver dollar during the interregnum from Dec. 1, 1873, to Feb. 28, 1878. It had previously belonged to Group A, but at the date first mentioned it was surreptitiously dropped from the list of coins which the Mint was authorized to fabricate.[1] This act transferred the outstanding coins from Group A to B. They remained unlimited legal tenders, but no more of them could be coined.[2] At the last-named date silver dollars were again permitted to be fabricated, but only for and on account of the Government, a fact that transferred them to the class of Seignoried coins. The silver dollar has always been and still remains an unlimited legal tender; nevertheless, the associated bankers of New York and other cities of the United States have practically reduced it to a limited tender by substantially defying the law in their refusal to receive it on deposit.[3]

[1] Its coinage is monopolized by the State, which purchases the bullion and makes a profit upon the fabrication. See Minute by the writer on the Standard of the United States, in "Report of the United States Silver Commission," 1876, i., Appendix 90.

[2] This is the case also with the silver thaler of Germany and écu of France. They are no longer open to "free" coinage.

[3] This extraordinary action, emanating from outside sources, operating through the Clearing House of New York, and—strangely enough—supported by the Secretary of the United States Treasury, who has shirked his duty to enforce the law, is believed to be quite unique in the history of money.

Order I., Class 4. *Seignoried Coins.* Marked; volume not fixed. Group A, coinage not limited. Examples of unlimited legal tenders of this group are furnished by most of the Spanish and Portuguese silver dollars and milreis and gold doubloons, moidores, &c., minted during the sixteenth, seventeenth, and eighteenth centuries; of limited legal tenders by the Spanish and Portuguese silver coins of the smaller denominations; and of special legal tenders by the "beshlik" silver coins of Turkey, which are legal tenders for only certain classes of payments and not for others.[1]

To Seignoried coins, Group B, of unlimited legal tender, belongs the American silver dollar since February 28, 1878; to the limited legal tenders belong the smaller or "subsidiary" silver coins of the United States, Great Britain, Germany, the Latin Union, &c., which are legal tender for all classes of payments, but not beyond certain limited sums in any one payment; and to the special legal tenders belonged certain French coins of the Middle Ages which were current only in the cities where they were minted. The "autonomous" coins of the ancients were also of this kind.

Order I., Class 5. *Coinable Bullion.* When the law or custom opens the mints of a country to "free coinage," that is to say, coinage at the pleasure and upon the demand of the owners of bullion, and either free of expense to them, as in Great Britain, the United States, &c., or at the bare cost of fabrication (*brassage*) as in France, and when,

[1] "History of Money in Modern Countries," chapter on Turkey.

in addition to granting such privileges, the Government provides mints, capable, ready, and willing to expeditiously coin all the bullion likely to be thus offered to them for coinage, then the bullion itself becomes so far money that it only needs a signal from the owner to make it so. Under such laws the quantity of money in circulation can no longer be regulated by Government. This high prerogative of State has been surrendered to private parties, who can through its agency, and with the aid of a melting-pot, create or destroy, and lengthen or contract, the measure of value at pleasure, and without the slightest expense or inconvenience to themselves.

The passage of a "free coinage" law in a country previously without one, and possessing the means to coin all the bullion offered, would have substantially the same effect upon prices as a sudden increase to its volume of money.[1] Strictly speaking, bullion is not money, and it is incorrect to include it in money; nevertheless, if legal and mechanical provision is made for turning one into the other, there can be but little practical difference between them. Under such circumstances bullion becomes a sort of potential money, and its position in the law analogous to that which some illiterate persons have advocated for all commodities. Their notion was that in order to measure value accurately money should have no limits, and they proposed to make everything a legal tender for everything—or, what is the same thing, to issue legal-tender notes corresponding in

[1] Indeed, such was the original object of "free coinage" laws, which belonged to the Mercantile System of the Middle Ages.

amount to the present (why the present?) nominal value of everything else.[1]

Schemes so monstrous as these belong to the domain of lunacy, and "free coinage" is of a kind not far removed from them. As the case now stands, a private telegraphic order sent across the Atlantic may in a week's time summon bullion from the coin or bullion stock of some remote country, and within another week this bullion may be coined into British pounds or American dollars, and the measure of value thus curtailed in one country and lengthened in the other without the knowledge or consent of either. If prices have risen through violent fluctuations since this survival of the Mercantile System has been rendered mischievously effective by means of submarine cables, it is not because the world's stock of the precious metals has increased (for it has not), but because the emissions of bank notes and the masquerading of bullion now as the coin of one nation, and now as that of another, have subjected the measure of value to the design of intriguants and speculators.[2]

Convertible Moneys are divisible into five classes, as follows:—

[1] See pamphlet, "Money and Usury," by W. M. B. Hartley (New York (?), 1869), p. 12. I have seen a similar proposition more elaborately set forth by another pamphleteer, but cannot recall the work.

[2] An important movement of this kind is being conducted at the present moment (February, 1885) between London and New York. The demonetization of silver in the United States in 1873, and the present attempt to again demonetize it, was and is being made in the interest of political intriguers and speculators in exchange.

Order II., Class 1. *Individual Notes.* Examples—the notes of Robert Morris, American Finance Minister in 1786; the notes of numerous individual bankers throughout the various States of the Union previous to 1863, as Pratt's Bank of Buffalo; and the notes of private banking houses in the principal cities of China.[1] All these notes circulated as money, not by force of law, but custom.

Order II., Class 2. *Bank Notes.* Of these there are three principal groups:—

Group A.—Deposit Notes, or notes issued by banks in lieu of deposits of coin or bullion, and not exceeding the nominal sum of such deposits. Example—the notes of the Bank of Stockholm during the seventeenth century.

Group B.—Secured Notes, or bank notes issued upon the security of a partial deposit or reserve of coins or bullion, as those of the national banks of England, France, and the United States; or upon a deposit of national, provincial, communal, or corporative stocks, without any coin or bullion reserve, as those of some of the old "State-Banks" of America; or upon both, as those of other of the "State-banks."

These notes are divisible into non-legal tender, as the American "State-bank" notes; and special legal tender, as the national bank notes of England, France, and the so-called "National-bank" notes of the United States.

Group C.—Unsecured Notes, or bank notes issued upon no security of payment, or of convertibility into coins, or other commodities. Non-legal-tender notes of this class

[1] "History of Money," chapter on China.

were issued by many of the old American "State-banks." Examples of limited tenders also occur among their issues, this function having been accorded to them by the custom of the United States revenue collectors, who, until the year 1836, were in the habit of receiving them for public dues. The Government then put a stop to the practice.

Order II., Class 3. *Corporate Notes.* The Reading Railway, and various other corporations, not banks, in America, have issued notes of one or other of all the kinds mentioned under Class 2 of this order.

Order II., Class 4. *Communal Notes.* Notes issued by communes or municipalities, and circulated as money, such as those of the Society of Utopia, in Ohio. These were issued by the community (a voluntary one) in payment for services rendered to it, and were payable in "day's work." They were unlimited legal tenders. The effect of these notes upon prices occasioned the breaking up of the Society.[1]

Order II,, Class 5. *National Notes.* Notes issued by national Governments. Of such notes there are six principal groups:—

Group A.—Deposit Notes. The gold certificates of the United States were at one time strictly deposit notes. They are at present issued in excess of the deposit.

Group B.—Treasury Notes. Example—the United States "demand" notes of August 5, 1861.

Group C.—Exchequer Notes, as those issued by the

[1] For an account of all the various classes of Communal Notes see "History of Money," chapter on the United States.

Government of Great Britain. They are payable out of anticipated revenues.[1]

Group D.—Funding Notes. These are temporary notes issued during the refunding of public bonds or "stocks."

Group E.—Land Notes. Examples—the land notes of Pennsylvania, the French mandats, &c.[2]

Group F.—Interest-bearing Notes. Examples—various issues of the United States during the Civil War.

Each of these six groups are again divisible into Unlimited, Limited, and Special legal tender, examples of which occur in the author's "History of Money," but are not adduced here, for fear of rendering the work too prolix.

Order III. *Inconvertible Moneys.*—Of these there are two principal classes: (1) Bank notes, as the Bank of England notes from February 26, 1797, to May 1, 1821, and those of the Banks of Russia, Austria, etc., at the present time; and (2) Government notes. Of the latter there are two principal groups—(A) Treasury notes, as those of the various Governments of Brazil, Buenos Ayres, Turkey (cäimé), Japan (kinsatsu), etc.; and (B) Interest-bearing notes, as were some of those of the United States during the Civil War. Both of these classes of money, and each of the groups of the latter one, are divisible into the three kinds of Unlimited, Limited, and Special legal ten-

[1] "History of Money" (chapter on Great Britain), and Harvey's "Paper Money," London, 1877, p. 230, where a *fac simile* of one of these notes is given.

[2] "History of Money" (chapters on North American Colonies and France), and Harvey's "Paper Money."

ders, examples of which are to be found in the author's "History of Money."

Order IV. *Composite Moneys.*—These moneys consist of two or more of either of the foregoing orders, classes, groups, or kinds of moneys combined. Examples of this composite order are afforded by the moneys of every state of the modern world. Each one of their monetary systems consists of various kinds of money whose heterogeneous and dissimilar characteristics and attributes strikingly reveal their feudal origin. This feudal heterogeneity and compositeness are as fully exemplified in the money of the newest of these states—that one whose foundation arose out of a protest and revolution against the feudal system[1]—as in that of the oldest.

In the money of the United States, the dollar is the nominal common fraction of the unit or measure of value —not (as the law ignorantly declares it) the unit of value itself. So far is this money from being specifically limited or fixed in volume, that the number of "dollars" has varied from nineteen millions in 1790 to eight hundred and fifty millions in 1866, and from $4.60 per capita of population in 1798, and $6.90 in 1843, to $14.00 in 1837 (before the "Suspension") and $22.80 in 1868 (before "Black Friday.") With reference to the dissimilarity of the fractions of which this widely fluctuating unit was composed, it need only be said that to-day, after the suppression of a dozen conflicting systems of "State-bank" notes, and endless classes of local "shin-plasters," there are no less than twenty

[1] The United States.

different kinds of "dollars" in existence, and made legal tender by law. These are as follows:—

1. The gold dollar of a date prior to 1837, and heavier than the present one.

2. The present gold dollar, containing 22.23 grains of pure gold.

3. The silver dollar, containing 371.25 grains of pure silver. This has always been its weight.

4. The trade dollar, containing 378 grains of pure silver. This dollar was formerly legal tender to the extent of five dollars; it is now demonetized.

5. The subsidiary silver dollar, consisting of halves, quarters, twenty, ten, and five-cent pieces, and containing 347.22 grains of pure silver. Legal tender for five dollars only.

6. The base silver dollar, consisting of 33.1-3 three-cent base silver pieces, containing —— grains of pure silver.

7. A nickel dollar, consisting of twenty five-cent nickel pieces.

8. Another nickel dollar, consisting of 33.1-3 three-cent nickel pieces.

9. A copper dollar, consisting of 100 one-cent (old) copper pieces.

10. A copper dollar, consisting of 100 one-cent (new) copper pieces, containing 4800 grains of copper, zinc, and tin, combined.

11. A copper dollar, consisting of 100 one-cent (new) copper pieces, containing no zinc or tin.

12. A copper dollar, consisting of 50 two-cent copper pieces, containing 4,800 grains of copper.

13. The Treasury "demand-note" dollar, issued under Act of August 5, 1861, expressly payable in coins. Unlimited legal tender for all purposes.

14. The "Greenback" dollar, Act of February 25, 1862, payable in itself, and an unlimited legal tender for all purposes except customs duties and interest on the public debt. The status of these notes was altered by Act of March 18, 1869, and January 14, 1875; but in case of a suspension of "specie payments" they would practically resume their former status. The fractional notes issued under the same Act are of the same character.

15. The National Bank note dollar, provided for by Act of 1863. This is a legal tender to any amount to and from the Government, except for duties and interest on the public debt; but is not a legal tender between individuals.

16. The National Bank gold dollar is similar to the last, except that it is expressly payable in gold (?) coins.

17 & 18. The one and two-year interest-bearing Treasury note dollars. Act of March 3, 1863.

19. The compound-interest-bearing Treasury note dollar. Acts of March 3, 1863, and June 30, 1864.

20. The gold certificate Treasury dollar. Act of March 1, 1862.

21. The certificates issued under Act of March 3, 1863.

22. The certificates issued under Act of March 2, 1867, and different from the former ones.

23. The certificates issued under Act of June 8, 1872.

24. The silver certificate Treasury dollar. Act of Feb. 28, 1878.

25. The refunding certificates. Act of Feb. 26, 1879.

At the present time these various dollars circulate upon a par with each other; but circumstances could happen by reason of which they might all differ in value, because they have different legal attributes, or are issued subject to different conditions.[1]

Limited Moneys.—The second great genera of moneys consist of those whose volume or numbers are specifically limited by law and restricted by practice. Among the highly civilized nations of antiquity, before felted paper, or paper of sufficient toughness for the purpose, was invented,[2] the symbols of such money consisted of porcelain tablets, as in China; thin iron discs, as in Sparta; highly artistic copper discs, as in Rome; discs of a secret metallic compound, as in Carthage; or tablets of stamped clay or leather, as in several other states. In all cases where these moneys permanently retained their original value, it was by means of limiting the number of symbols employed, by protecting them from counterfeiting, and by abolishing all other kinds of moneys. The bits of material which represented the

[1] Within the last few years the writer has seen gold dollars at a discount in greenbacks; and silver dollars, silver trade-dollars, silver fractional dollars, and nickels, at a discount in gold dollars; whilst a few years previously greenback dollars stood at a discount in all of the others.

[2] The paper of classical antiquity was made by pasting together the leaves of the papyrus. It was flimsy, and when dry, brittle.

numbers, whether porcelain, sheet-iron, or leather, counted for nothing. The devices or legends upon them promised nothing. Their value was derived from the legal limitation of their numbers; from the legal obligation to receive them for debts, fines, taxes, commodities and services of all sorts; and from the legal interdiction of all other kinds of money. When such a numerical money followed some pre-existing metallic commodity money—as the system of Roman nummi, or sestercii, followed the As system—the old coins were retained in circulation for a time, in order that contracts previously made, but not yet fulfilled, might be discharged in the particular money for which they covenanted. Moneys of this character have usually at the outset been made unlimited legal tender. When their numbers, in ordinary payments, became inconveniently great, they were represented by multiples; when inconveniently few, by dividers; such multiples and dividers, when employed in the same system, being composed of different materials. Toward the end of the Roman system, multiples were made of silver: in the Oriental systems, the multiples were made of gold or silver, and the dividers of cowrie-shells.

Among these various systems that one of which we possess the most accurate details was the Roman. It was established about the year B.C. 385, remained intact for more than a century, and lasted in a modified form until about the year B.C. 217. At one period the symbols appear to have been over-valued about five times; at another, about six and a half times. But the data from which these particular inferences are derived may be misleading; and it is quite

possible that the over-valuation may have been the same at all times. The symbols were called nummi or numerato, and money in general nummus, from the Greek word nomos, meaning law. The system is described at length in the author's "History of Money in Ancient Countries." It was revived during the Augustan era, and lingered in a disrupted form until about the time of Vespasian, when it was again subverted.

Many of the National notes of modern countries have possessed, at one time or another, certain characteristics of Limited Moneys. Thus the Greenbacks of the United States were, by Act of June 30, 1864, definitely limited to four hundred millions of "dollars." But this limit was not only uncertain, from the fact that Congress never relinquished the power to change it by a single vote; it was rendered in great measure inoperative by permitting various other moneys to circulate upon a par with the greenbacks, as, for example, various interest-bearing notes of full legal tender, "National-Bank" notes of special legal tender, and coins of various kinds, of both unlimited and limited legal tender. Moreover, the greenbacks themselves were not unlimited legal tenders. They were of special tender. They could not be paid for customs-duties nor interest on the public debt—both of them very important classes of payments at that period. On the other hand, they were at one time funding notes, and could be exchanged for six-per-cent funds; and they were by the terms of the land laws always, and they are still, exchangeable for public lands at a fixed price. During the earlier history of the greenbacks,

"State-Bank" notes, tradesmen's tokens, postage-stamps, and other unlawful and uncouth moneys, mingled with these greenbacks, and were used with them in the exchanges, either through lack of rigour in executing the law, or want of administrative foresight in furnishing small denominations of the National notes, coupled with the pressure of commercial necessity. From February 26, 1862, to March 18, 1869—practically, until 1879—the greenbacks were payable only in themselves or in public lands, which at that period were not in demand; and their value—when not affected by the vicissitudes of war and, therefore, as the case stood, the fears of new emissions—depended substantially upon their Numbers, combined with that of the other moneys permitted to circulate with them; and not upon the pretended implication of payment in coins drawn from the word "dollar" used in the legends upon the greenbacks, or in the law of their emission. By the Act of March 18, 1869, it was declared to be the intention of the Government to pay them in coins; and under the Act of 1875, such as were presented at the Treasury after January 1, 1879, were paid in coins. Legally from 1869, and practically from 1879, they lost their *quasi* numerical character, and became convertible National and Land notes, which they still remain.

In a Limited system of money it is not at all essential that the fractions, numerators, or numeraries, should be made of a worthless material—as porcelain, leather, or paper. They may be made of gold, if so desired. But if the limit of money were maintained in any progressive community, it would be found that the material of which the numeraries

were formed would have no influence upon their value, which might rise to many times that of such material. Though, of course, it could never fall below it.

Such was the case with the Roman numeraries, and several others mentioned in the author's "History of Money." To maintain such a superior value, the limit of the emission must not be open to doubt, nor subject to the caprices or exigencies of the moment. It must be definitely and permanently fixed or regulated by the organic law and maintained by the executive power; in short, fixed as definitely, as certainly, as publicly, and as permanently, as are the limits of other measures, such as the mile, the pound, the gallon, or the acre.

The principal kinds of actual moneys have now been described and classified according to the importance of their several characteristics and legal attributes. It is not from these characteristics and attributes, considered separately and with respect to their various influences upon the expression of value, that the received principles of money are derived; but from the consideration of a portion of them lumped together. No analysis has hitherto been made of money; and that which, as it stands, is a most heterogeneous and complex object, has been treated as though it were homogeneous and simple. The principles of money have heretofore not been deduced from an orderly arrangement of the facts concerning it, but from disorder, from chaos, from the aspect of things endless in number and indeterminable in form, from the attributes of such things not in a simple condition, but when merged incongruously

with other things equally numerous and indeterminate; and from relations which were both intricate, involved, and indefinable. Within this maze, where Tycho Brahe, Copernicus, Newton, Locke, and Humboldt, feared to venture, the financial pedants and quacks of all ages have made themselves a paradise. It need scarcely be said that the principles they have established are utterly impracticable; that so far as man's intellect has been exerted in affairs relating to exchanges and money, books have been of little service to him; that the prizes of commercial life have too commonly fallen to the lot of the reckless and undeserving; and that those modern nations, whom nature, history, and opportunity, intended to be great, have been dragged down to the limits of littleness by monetary systems which were based on feudal infirmities, and a conservatism which hesitates to rise above them.

CHAPTER III.

STATISTICS OF MONEYS.

The statistics of moneys defective—Reasons—Coins melted and exported surreptitiously—Sometimes minted in one country to circulate in another—Coins used on shipboard—Coins melted in foreign mints—Counterfeit coins—Coinable bullion—Light coins—Coin reserves—Misleading and deceptive practices—Coins employed for special classes of payments—Paper money—Bank of England notes in foreign countries and on shipboard—Local circulation of American "State-Bank" notes—Counterfeits—Propriety of including bills, discounts, or cheques in the statistics of money decided adversely—International comparisons fallacious—Every country a law to itself concerning money.

THE comparative statistics of money in various countries for several centuries past which were published in the author's "History of the Precious Metals" were the result of many years of accumulation and comparison. Before giving them to the public in their final form, they were published from time to time in various periodicals, with the view of eliciting public criticism of their merits. Notwithstanding the favourable verdict which was passed upon them [1] it cannot be claimed that they are free from grave defects. Indeed, as the case stands, it is impossible to

[1] For example, in the London "Statist," March 20, 1880, and numerous other statistical journals.

obtain any statistics which correctly represent the true sum of money, operating on prices, in any given country at a given time. This is because all the moneys of modern nations are composite ones, and the sums of such moneys or measures of value are indeterminable. For comparative purposes, and in a rough sort of way, monetary statistics have a certain worth; but for more precise and scientific uses they cannot be safely employed.

The statistics of coins in circulation are usually deduced from the issues of the mints and the custom-house returns; but, for the following reasons, these are misleading:—

1. Vast quantities of coins are melted down by jewellers, bullion dealers, speculators, and others.

2. Considerable quantities are conveyed to and fro into and out of countries in the wallets of travellers, and without notice to the mints or statistical offices.

3. Large quantities are secreted and transported surreptitiously in packages of merchandise. This practice was more common in former times than at present, and is always more common in times of war than peace. Nevertheless, instances of the sort have come to the author's notice very recently, and wherein no obvious motive appeared to prompt it.

4. Coins are often fabricated in one country, in whose statistics they appear, while they really find circulation in another. The quantity of British coins in Portugal, Turkey, Egypt, South America, the British Colonies, and other countries, and in use on board of steam and other ships,

must be very great. French coins are to be seen in other countries than those of the Latin Monetary Union. American coins—even the seignoried ones—circulate in several Spanish American countries, whither they have found their way without the formality of being registered in the custom-houses. No penalty is enforced for making imperfect or false returns of exports; there is no practical way to detect them; and not only coins but bulky merchandise is shipped out of countries every day without being entered in the export statistics.[1] During the last century Portuguese moidores, jaos and half-jaos and Spanish dollars circulated freely in Great Britain and the Colonies. Prior to February 21, 1857 (the date of their demonetization), the chief portion of the silver coins which circulated in the United States were of Spanish mintage. Nearly all the gold coins at present in Portugal are British; all the gold and silver coins in China are foreign. Yet all these coins are included in the money statistics of the countries whence they originated, whether they were registered upon being exported or not.[2]

5. There are no statistics of the quantities of counterfeit coins in circulation, yet, judging from the vast number of convictions for counterfeiting, and the excellent appearance of many of the counterfeits, some of which almost defy

[1] This is the case in the United States, Great Britain, and many other countries. Relative to the United States, see Commerce and Navigation Report of the Bureau of Statistics for 1867; and as to Great Britain, see Sir Morton Peto's Essay on "Taxation," chapter ix.

[2] Vast quantities of American and other coins were recoined in Italy during the years 1882 and 1883.

detection, these quantities must be very great.[1] Upon the retirement of the German coinages of minor silver pieces under the Imperial Mint Acts of 1871 and 1873 it was found that more coins of given dates were returned to the mints than had ever emanated from them. It has been alleged that aluminium-bronze, and other cheap compounds can be made to imitate gold and silver so closely as to deceive all but the most skilful eyes,[2] whilst the design of a coin, however artistic, offers in modern days little or no obstacle to its successful imitation.

Perforated and stuffed coins have of late years become quite common in the principal countries of the world. The perforated ones are chiefly silver, the stuffed ones gold. The process of preparing the latter is to drill holes from the periphery toward the centre of the coin and fill in with base metal. It is extremely difficult to detect this species of imposture, and the coinage of a country may become and remain vitiated to a large extent before it is apt to attract official attention.

6. Bullion is commonly included in coins under the ambiguous and non-legal term "specie," a practice almost as erroneous and misleading as it would be to include notes or goods in them, for bullion can only become coins when it is minted, a process sometimes no less tedious than it would be to send notes or goods abroad in exchange

[1] Reports of the British Mint and United States Department of Justice and United States Treasurer.

[2] London "Mining Journal," 1883. See Index as to the particular date.

for coins to be imported and added to the existing stock.

7. Light coins are not made the subject of allowance in monetary statistics. It has been estimated that toward the close of the seventeenth century all the circulating coins of Great Britain were on the average one-third light.[1] Quite recently the subject of light half-sovereigns was considered important enough to engage the attention of British statesmen.

8. It is a common practice in many countries for banks and treasuries to issue so-called convertible notes upon a partial deposit or "reserve" of coins. No argument seems necessary to establish the impropriety of counting both the notes and the coins held to redeem them with as parts of the whole sum of money. Yet this is frequently done in statistics of money.

Nor is it always an easy matter to decide the sum of deposits or reserves which should rightfully be deducted from the issues of such notes in order to determine the volume of money outstanding. During the period when United States Treasury notes constituted practically the sole legal reserve for bank notes, the author was shown a package by the officers of one of the principal banks of New York which was supposed to contain several million dollars in "greenbacks," and in that guise had passed the scrutiny of the Government bank examiner, but which really was made up of "dummies," and he was assured that during a previous

[1] "History of Money in Modern Countries," chapter on Great Britain; and Macaulay's "History of England."

era of coin reserves bags of copper coins had been similarly made to do duty for gold ones.

9. As shown in the chapter on the Classification of Moneys, some coins have only a special function, to which they are confined by law or custom. In such cases there are equally valid objections to their inclusion or exclusion from the whole sum of money.

The statistics of paper money—as paper money has hitherto been issued—are marked by similar defects.

1. The quantity of Bank of England notes circulating beyond the British Isles must be very considerable, yet no allowance is made for them in the tables of money in Great Britain.

2. Some of the notes hitherto in use have had no circulation beyond the immediate vicinity of the banks that issued them; others circulated at a distance, but only at a discount. Under the "State-Bank" system of the United States, which lasted until 1863, a large proportion of the issues circulated at a discount of from one to ten per cent., and some of them scarcely went farther than from one mock agency in Wall Street to another.[1] The country bank note circulation of England is strictly local.

[1] About the year 1857 an Italian cook, one Girolamo Donadi, afterwards the lessee of a hotel in New York, started a "wild-cat" bank, nominally in Wisconsin, but really in his kitchen in New York. This bank he named, after his hotel, the "Gramercy." After printing $100,000 in notes he made a bargain with a money-changer, who subsequently became the president of a "national" bank, to redeem them at five per cent. discount, and quote them as "good" at that rate in the latter's "Bank Note Detector." Donadi then paid these notes to his

3. From 1863 to 1877 greenbacks were not employed for customs duties nor interest on the public debt, two important classes of payments. Previous to 1836 "State-Bank" notes were received by the United States for excise taxes, customs duties, and sales of public lands. In that year this practice was greatly restricted, an act that precipitated a long impending collapse of the "State-Banks."

4. At one time the proportion of counterfeit to genuine notes was greatly in excess of the proportion of counterfeit to genuine coins. The particulars of arrests and convictions for counterfeiting prove that the contrary is now the fact, and that the silk-threaded distinctive-fibre paper, the water-marks, the printing in colours, the highly artistic vignettes, the geometrical lathe-work, the numbers, signatures, and other mechanical safeguards of the modern paper note, render it far more difficult to imitate than a coin.

Before these improvements were invented the sum of counterfeit notes circulating in the leading countries, and not included in the statistics of money, must have been very great. A large proportion of the old issues of Brazil—

employés and tradesmen at par, afterwards buying them in through the money-changer at five per cent. discount, the accomplices dividing the profits. Seizing a favourable moment when an unusually large sum of the notes was outstanding, Donadi absconded, and was never heard of again. These $100,000, and many other sums like it, are included in the so-called official statistics of "State-Bank" notes in circulation which were published by the United States Treasury, and now, owing to the fall of the "State-Bank" system, remain the readiest and most commonly used source of information on the subject; an example at once of the unreliability of such statistics and the danger of permitting them to appear in official reports.

and many of these are still in circulation—were spurious. In certain cases where belligerent Governments connived at the counterfeiting of the enemy's paper money, the proportion of counterfeits was so great as to precipitate the downfall of the entire system. This was done by the British Government with respect to the American Continental notes and the French mandats; by the American Government with respect to the Confederate notes; and by the favourites of the Brazilian Government offices with respect to its own notes.[1]

Some writers on the subject have insisted upon the propriety of including in money the sum of private bills of exchange or promissory notes outstanding; others, the sum of the discounts and loans of banks; others, the sum of bank cheques drawn, etc.

These opinions, and the arguments by which they are sustained, are not destitute of plausibility, but they are unsound. Money is what the law or custom makes receivable for payments, taxes, and debts; and such is not the case with the instruments or agencies mentioned. Rather are they quickeners of money, or means which render it more efficient. It would be no more proper to include them in money than to include railways and telegraphs, which are also quickeners of money and render it more efficient.[2]

[1] "History of Money," chapter on Counterfeiting.

[2] Said Sir Robert Peel, in his speech of May 6, 1844: "In using the word 'money' I mean to designate by that word the coin of the realm and promissory notes payable to bearer on demand. In using the words 'paper currency' I mean only such promissory notes. I do not include in these terms bills of exchange, or drafts on bankers, or other forms

In Turkey, Brazil, Peru, etc., bank cheques, except at the sea-ports and among foreign merchants, are unknown;[1]

of paper credit. There is a natural distinction, in my opinion, between the character of a promissory note payable to bearer on demand and other forms of paper credit, and between the effects which they respectively produce upon the prices of commodities and upon the exchanges. The one answers all the purposes of money, passes from hand to hand without endorsement, and without examination—if there be no suspicion of forgery; and it is in fact, what its designation implies it to be, currency, or circulating medium."

Said the Chief Justice of the United States, Mr. Salmon P. Chase, previously the Secretary of the Treasury, and author of the "Greenback" and "National Bank" systems, in a letter to the writer, dated December 6, 1869: "I notice in your table of currency (this table was afterwards printed in the 'History of the Precious Metals,' p. 214) that you put the amount in 1862-3 and afterwards considerably higher than I do. My idea is that no interest-bearing paper can properly be called currency. No doubt such paper, and many other things, and especially bank cheques, private cheques on banks, and sight bills, largely fulfil the functions of currency, but they cannot properly be so denominated. Whilst I was Secretary of the Treasury the amount of United States notes and National Bank notes did not exceed four hundred and eighty million dollars; beside which, there were about sixty million dollars of 'State-Bank' notes afloat. Of the United States notes fifty million dollars were a 'reserve' for the 'Temporary Loan,' and rose and fell with the amount of it inversely."

The table referred to did not include "bank cheques, private cheques on banks, sight bills," promissory notes, nor indeed any other kind of currency, or so-called currency, except the following: Gold and silver

[1] The drawing of a cheque by a traveller at an important town distant about three hundred miles from Rio Janeiro, upon a bank at that place, seemed so strange as to require a long explanation, and so remarkable as to bring together the entire Municipal Chamber to witness it. "Travels in Brazil," by the author, "San Francisco Chronicle," 1883.

in the countries of Continental Europe they are seldom employed; in England they are used chiefly for large sums; in the United States they are in common use for sums so small as $25; in China they are often used for the most trivial sums. Similar disparities exist with reference to the custom in various countries of depositing money in banks, the employment of railways, telegraphs, etc.

When these many difficulties which, under prevailing systems of money, stand in the way of correctly estimating the sum of money in a given country and era, are considered, the complacency with which the United States Mint Bureau year after year tabulates and publishes statistics of this character as "official" would be inexplicable were it not probable that the course pursued has been governed by some sinister object in connection with the Resumption Act.[1]

In view of the difficulties which surround the subject, the statistics of money will be cited in the present work with

coins, demand notes, greenbacks, interest-bearing greenbacks, National Bank notes and State-Bank notes; all of which, except the State-Bank notes (then reduced to a comparatively small sum) were legal tender moneys. With all respect for the opinion of his illustrious correspondent, the writer was unable to agree with him concerning the monetary character of interest-bearing legal-tender demand notes. When not held in the place of other classes of greenbacks they circulated from hand to hand, and exercised precisely the same influences upon prices and foreign exchanges. They were, undoubtedly, money.

[1] There is scarcely a form of defect to which statistics of composite moneys are subjected which does not appear in these publications. One of them accords to the United States in 1882 upwards of 773 million dollars in gold and silver money; whereas, according to the reports of the Treasurer and Comptroller, the treasury and banks only

far more caution and less assurance. Their use will be limited to two or three leading countries in which the statistics of money are best determined, and it will also be confined to showing, approximately, the increase and decrease of money from time to time in each of these countries separately. By pursuing this course the defects peculiar to such statistics will be restricted within the narrowest possible limits.

As to making international comparisons of money, nothing can be more fallacious. Each country should be, and in many respects is, as much a law to itself in reference to money as it is with respect to the various measures of length, weight, etc., with which money is so often compared; nay, the example of one country or one era with reference to money is, in most cases, the very last thing that should be consulted in framing laws or deducing rules for another.[1]

held 325 millions, including uncoined bullion and paper certificates; and whereas in point of fact, outside of the mining regions west of the Rocky Mountains, there is scarcely a gold coin in circulation from one end of the United States to the other. For a specimen of these extraordinary statistics, see Report of United States Mint Bureau, in "Finance Report," 1882, p. 257.

[1] See proposal of John G. Fichte to the Government of Prussia showing the necessity of a distinctive money to a progressive nation, as quoted in Britton A. Hill's pamphlet on "Absolute Money," St. Louis, 1875, p. iv. This subject is treated at length in the author's "Politics of Money."

CHAPTER IV.

THE FUNCTION OF MONEY IS TO MEASURE VALUE.

The function of money correctly understood by Aristotle—During the era of that philosopher the volume of money in each country was limited, and it formed a definite measure of value therein—It is now everywhere unlimited, and has lost its character of an exact measure—Money is not defined in the laws—For this reason it is unlike all other measures—Money is intended, but not now fitted for, a measure—The size or weight of a dollar or pound sterling furnishes no guide to the whole number of dollars or pounds; yet it is this which constitutes the measure of value—The measuring function of money is altered with every change in the whole number of so-called units of value—Not so with the units of weight, length, volume or area.

MORE than twenty centuries ago the function of money was so correctly expressed by Aristotle that little seems needed to render his description of it complete. "The function of money," said the Stagyrite, "is to measure value." If we add "with precision," the definition appears to satisfy all requirements. When Aristotle wrote, no such addition was necessary. The volume of money in several of the Greek States was, or had been, limited by law; and in each one it formed a definite and precise measure of value.[1]

[1] A full account of these moneys will be found in the author's "History of Money in Ancient Countries"—chapter on Greece and Greek Colonies.

The following principles of money are from Aristotle: "Money

But such is no longer the case. In each and all of the various countries of the world the whole numbers or volume of money is unlimited, and money has lost its character of a precise measure. It is a measure, but one whose dimensions are fluctuating; so that its function is practically impaired.

When we say that the function of gallon measures is to measure the volume of liquids, we mean by gallon measures certain concrete things of prescribed sizes or limits; contrariwise, when moneys are mentioned there is, under existing circumstances, no precise meaning to be attached to them. The laws of modern states do not define the sizes nor limits of moneys; nor does custom establish them.

(nomisma) by itself is but a mere device which has value only by law (nomos) and not by nature, so that a change of convention between those who use it is sufficient to deprive it of value and its power to satisfy our wants."—"Politica."

"By virtue of voluntary convention money (nomisma) has become the medium of exchange. We call it 'nomisma' because its efficiency is due not to nature, but to law (nomos), and because it is in our power to regulate it."—"Ethica."

The following are from the "Pandects" of Justinian, and are said to have been introduced into that code of laws by Julius Paulus, a Roman lawyer of the third century A.D. In the author's opinion, they are much older. "As it seldom happened that what one (man) possessed (to sell) the other (man) wanted (to buy)—and conversely—a thing was fixed upon whose legal and perpetual value remedied, by its homogeneity, the difficulties of barter. This thing, being officially fabricated, circulates and maintains its value, not so much from its substance as from its quantity."

Both of these quotations are reprinted from the testimony of M. Henri Cernuschi before the United States Silver Commission, as published in their Report, vol. ii. p. 475; the originals not being accessible in San Francisco, where the present work is being written.

Let us state this proposition more at length.

To measure is to number; all measurements are ascertainments of numerical relations; numerical relations can only be stated in numbers.

But in point of fact, measurements are made with yard-sticks, pound-weights, and the like.

What is the reason for such a practice? If to measure is to number, why will not numbers alone, without yard-sticks or pound-weights, serve to measure length, weight, etc.?

Because numbers are abstract and illimitable, whilst the things to be measured are concrete and limited; and in order to measure them with precision it is necessary to employ concrete and limited measures. To say that the length of a building is 100, means nothing; to say that it is equal to that of 100 yards, meaning 100 yard-sticks, has a precise significance, and one which everybody comprehends.

In order to measure value, it would certainly seem that just as concrete and limited a money is required as yard-sticks for distances, or gallon measures for volumes. But whilst the law defines the dimensions of a yard, a pound, and a gallon, with great precision, it wholly fails and omits to define the dimensions of money.

It follows that money, until it be precisely defined and limited, is little better than an abstraction; and to say that its function is to measure value is to say a thing that, however true, can have, as matters now stand, no practical use.

Remembering the present position of money in the law, unnamed, unrecognised, undefined, unlimited, there exists between it and other quantitative measures not a simil-

arity; but, on the contrary, the most important difference. The efficiency of measures runs no risk of being impaired, either by alterations in the law, the disturbance of peace, the currents of trade, the conspiracies of designing men, or the caprices of fashion. The efficiency of money as it now stands is liable to be affected by these causes and many others.

Under the same legal jurisdiction there is but one—an unalterable—measure of weight, one of length, one of volume, one of area, etc. These measures, carefully described and identified in the law, are kept by the Government in some safe place—for example, the Treasury building at Washington, or the Tower of London. All other weights and measures under the same law are copies or duplicates. By the aid of these copies a vast number of measurements can be made at different times, or at the same time at different places, without disturbing, changing, or wearing out the originals; and as, when a measure is once fixed and publicly defined it is plainly the interest of society to keep it so, and it would be a flagrant violation of equity to alter it, there is little or no danger that these measures will be changed by either edict or legislation.

But such is not the case with money as it now stands. It is not recognised, not defined, not limited in the law; there is no description of it to be found in the statutes of any country; there is none, for example, in the laws of the United States or Great Britain; no prototype of money is kept in any safe place by the Government; money has no peculiar size, shape, dimensions, volume; it is not a mea-

sure, nor is it essentially like a measure; and to draw conclusions from its apparent resemblance to a measure is to do violence to the facts.

Those who would clothe money with the attributes of a precise measure do indeed accord it the function for which it was intended, but for which it is not at present fitted. They forget that all other measures enjoy legal recognition; that they are defined in the law with all the precision that modern scientific observation and refinement can effect; and that, on the contrary, money—as we have unthinkingly adopted it from the Feudal law—is an undefined and shapeless thing, whose dimensions and fitness as a measure of value is whatever the chances of war, trade or fashion, or the caprices of the rich, the powerful, or the indifferent, may choose to make it.

If it be argued that whilst money is not recognised nor described in the law, the undetermined fractions of money, as coins, bank notes, etc., are both recognised and described, the answer is that since the quantitative relations of such coins or bank notes to the whole money is unknown, they fail to resemble the fractions of other measures, and they cannot precisely measure anything.

Nobody has ever ventured to maintain that any one coin was the measure of value, nor that any number of coins less than the whole number in use constituted such a measure. To do so would have been to maintain a palpable absurdity. As the whole number of coins, notes, etc, is what really constitutes the measure of value, and as, at the present time, no limit is assigned to the whole number, it follows that there

is no limit to the measure of value. If a mile were nowhere described in the law, but instead, some indeterminable fraction of a mile were stated to be exactly so many inches and barleycorns long, then the legal position of miles and moneys would be alike. But in such case, who would be able to determine the length of such a mile? and who can now determine the value of such a money?

If it be answered that the value of money is determined by that of the material of which it is made, the reply to this is that all the political economists, without exception, have admitted that to double the number of pieces of money of the same denomination—no matter of what material made —would be to diminish the value of each piece by one-half, and *vice versâ*.[1] Hence it follows that the value of money is determined by numbers and not by material. But there is a reply whose cogency is far more evident than this one, because it takes the whole subject out of the sophistical realms of political economy, and scans it by the unmistaken eyes of fact. That reply is that the value of the material (gold, for example) is itself determined not by the cost of production, but chiefly by the quantity of the stock on hand; and, moreover, that—differing from all other commodities except improved land—the cost of production does not regulate the quantity produced from time to time.[2]

[1] "If the whole money in circulation was doubled, prices would be doubled."—John Stuart Mill, "Polit. Econ.," iii. 8. 2. p. 299.

[2] Consult my "History of the Precious Metals," where this subject is dealt with inductively, and at great length.

Let us endeavour to comprehend the subtle function of money by looking at the subject from another point of view.

In the laws of the United States the American gallon is described as "a vessel containing 58372.2 grains (8.3389 pounds avoirdupois) of the standard pound of distilled water, at the temperature of maximum density of water, the vessel being weighed in air in which the barometer is 30 inches at 62° Fahrenheit."[1]

The vessel thus described is kept in the United States States Treasury building at Washington, and copies or duplicates are furnished, on application, to such persons as may desire them. It matters not how many copies of this vessel are made, nor whether they are made of brass, tin, wood, glass, or other substances; nor whether the copies are cheap, dear, stamped, unstamped, in use, or out of use, the original gallon or standard, and its functional power as a measure, remains wholly unaffected; and, for the reasons already stated, it is likely to so remain indefinitely.

Is this the case at present with the measure called money? Not at all. It is nowhere mentioned in the law; its volume, its dimensions, the number of its pieces or constituent parts, are entirely ignored. They have no place whatever in the legal institutions of the United States, nor,

[1] Executive Document No. 27, 34th Congress, 3rd Session: consisting of Professor Bache's Report on Weights and Measures. Washington, 1857.

"The relation of this gallon measure to weight is said to disagree slightly with that accorded by the same authority to the bushel."—Barnard's "Metric System," p. 39.

indeed, of any other country. It may be argued that although money is not defined in the statutes, coins are. But this does not help the case, because there is no legal requirement concerning the number of such coins as shall constitute the volume or whole of money. Moreover, by a confusion of language which could only have arisen out of the grossness of the medieval law upon which these statutes are founded, and the medieval language in which they are couched, these coins are termed "units of value." Say the Statutes: "The gold coins of the United States shall be a dollar piece, which at the standard (*i.e.*, nine-tenths fine) weight of twenty-five and eight-tenths grains shall be the unit of value,"[1] and then it goes on to mention other gold coins. Another statute confers a similar character upon the silver dollar piece of 412½ grains, nine-tenths fine. The statutes do not say that either of these pieces shall be the unit of value in preference to the other, but makes them both equally units; which, as the law in this respect is not inoperative, should have suggested the truth that neither of them are units. The same statutes and the decisions of the Supreme Court of the United States also make several other pieces of money, some composed of metal, others of paper, equally units of value; so that, as shown in a previous chapter, there are at the present time no less than twenty odd different kinds of units of value recognised by the laws of this country, and with a number of each of which a debt can lawfully be paid. Is not this defiance of reason, this violation and confusion of language, which the law commits,

[1] Revised Statutes of the United States, Section 3511.

in itself a sufficient proof that the theory from which it arises is false, and that neither of these pieces are in fact the unit of value, but that all of them together compose such unit?

If we disregard both fact and reason, and, following the law, accept either of these pieces of money as the unit of value, we immediately become involved in practical difficulties.

It is a well-known fact that every time an additional one of the coins called dollars or pounds, and miscalled units of value, is put into circulation the measuring value of the original one becomes impaired. More than this, the function of this coin is certain to be modified by the emission of every promise of a dollar or pound coin which the law may authorise to be tendered for payments, or which custom may sanction for the same purpose. Even a shipment of uncoined bullion, either into or out of a given country, will, as the laws now stand, affect the measuring power of money in such country.[1] From these circumstances it appears that what the law calls a unit of value in fact is not a unit at all. The law views it and defines it as though it were distinct and separable from all other things; but nature instantly merges it with all like and many unlike things, and makes the whole number of these things the

[1] The affairs of the New England colonies were often thrown into disorder by the arrival of plate-ships from the West Indies. Sir Isaac Newton records similar results in England which followed the arrival of plate-ships from America; and other instances are mentioned in Mavor's "Voyages," ii. 223, *et seq.* This subject is fully treated, and numerous instances given relating to it, in the author's "History of Money."

real measure or unit. And as this whole number is not specified nor defined in the law, it follows that the real unit has no definite limits nor dimensions, and therefore that it has no determinable relation to value.

In substance the law says: "Such a thing shall be the unit of value; there shall be a blank number of such things made; they are of such a nature and shall have such legal attributes that they can only be used collectively and therefore in point of fact the real unit of value must be the whole number of them combined; but I decline to state what that number shall be; I decline to place any limit to it; I decline to fill up the blank."

The essential difference between money as it now stands in the law and other measures, whether of length, weight, volume, or area is thus rendered evident. The units of these are concrete and defined; they are not liable to be changed by edict or legislation, and cannot be modified by duplication; whilst money is abstract and undefined, and coins, bank notes, and other so-called "units of value," are in fact modified in functional power and efficiency with every increase or decrease of their combined number.[1] In other words, the unit of money is not one coin, but all coins or moneys combined; whilst, on the contrary, the unit of length or measure is not all yard-sticks or pint-pots collectively, but only one of them.

An increase or diminution of the whole numbers of yard-sticks will not affect the relation of length between any one

[1] This distinction was pointed out by the gifted Bastiat. See his "Harmonies of Political Economy," London ed., p. 125.

yard-stick and any other object. An increase or diminution of the whole numbers of coins or notes clothed with the functions of money will instantly begin to change the relation of value between any one such coin or note and any other object. And such increase or diminution—as the law now stands—is within the power of every man to make in direct proportion as he is rich and powerful. When money shall be recognized in the law, when it is defined, when its volume, magnitude, dimensions, limits are set forth as precisely, fixed as unchangeably, and protected as securely from alteration, as are now the dimensions of the yard-stick, the pint-pot, and the pound-weight, then, and then only, will money perfectly resemble other measures; for then only will it become a concrete thing of known dimensions. When this comes to pass, Aristotle's definition of its function will resume its original correctness, and money will be as fit in fact, as it is now only in theory, to measure the relation called value.

CHAPTER V.

VALUE IS A NUMERICAL RELATION.

Legal use of the words unit of value—Their importance—They are not defined in the law—Unit a synonym for measure—Evolution of the word value—Its Classical meaning related to the power of numbers—During the Dark Ages it became associated with labour—In the Rennaissance it acquired the meaning of an attribute of matter—Fallacy of this last view—The correct nature of value rediscovered by Montesquieu and Bastiat—Value shown to be a numerical ratio between all exchangeable things—Its further character difficult to define because of its continual variance—Though indefinable it is not immeasurable—Value measurable by the whole numbers of money—The existing mint laws practically make the whole numbers of money or unit or measure of value to consist of an indefinite sum whose only limits fluctuate between illimitable demand and uncertain supply.

THE laws of the United States ordain that either one of several different coins weighing so many grains, or of pieces of paper of such a size, each called a dollar, shall be "the unit of value."

It is not extravagant to say that upon these two little words hang much of the welfare of the country. When either of them is changed there will have happened a momentous revolution.

Important as they are, neither of these words is defined in the law. Reasoning from its use in analogous cases, "unit" is a synonym for measure; but the meaning of

value is not to be determined by analogy, for there is no analogous use of it in the statutes.

When it is remembered that the ablest logicians of all countries, from Aristotle to Mill, have vainly endeavoured to give it form, it will begin to be seen how complex and obscure the nature of value must be, and therefore in what great uncertainty the statutes have involved all commercial relations, by using, without defining, this intricate term.

Nor is its use a mere matter of speech, of interest alone to pedants or grammarians. The law treats value as a thing, and measures our affairs and fortunes by means of assumed relations to this thing, which, we shall see as we go on, is not a thing at all.

The law ordains that each one of its plural and numberless units called dollars shall be the measure of value in every exchange; and it compels these so-called units of value to be accepted in lieu of commodities and services and for taxes, fines, and judicial awards. The law says, practically, You shall pay a unit of something which Aristotle never discovered; you shall be taxed ten units of something which Mill could not define; you shall be awarded a hundred units of something which is not described in the present law and of which everybody at the present time has a different conception.

As has been shown in the case of money, words are subject to an evolution which marks the course of ideas, just as—going a step further back—ideas follow the material progress of man. Thus, with the growth of the social organism words are created, refined, and specialised.

With its decay they lose their special meanings and refinement; they become attached to grosser and grosser conceptions, and finally are absorbed into other words, and lost. If a societary revival occurs, and the old word is resuscitated to grow anew, the new growth may be of quite a different character from the old.

Bearing in mind the numerical character of the ancient Greek and Roman monetary systems, the word value, whose root is valeo, or power, appears at one period to have become attached especially to the power of numbers, meaning an arithmetical ratio of some sort. This, again, by metonym, came to mean purchasing power. In later times, when moneys of limited numbers had given way to those of unlimited coinage, when the Roman Commonwealth had become an Empire and the public weal was supplanted by the interests of classes, the original refined meaning of value was lost, and the term became associated with grosser conceptions, until, in the Dark Ages, it was attached only to individual services and their produce; and it is in this sense, probably, that it is used in the American law.

With the Renaissance—the revival of commerce and the study of commercial facts and phenomena—the term value revived and acquired a new growth. From being a thing, or the associate of things, it rose to be classed with the attributes of things. It is in this sense that it is viewed by the Economists who successively discovered value in the attributes of materiality, durability, difficulty or cost of production, utility, desirability, etc.

Upon applying certain crucial facts to these last named

views they are readily seen to be erroneous. Services have neither materiality nor durability, yet the fact that they have to be paid for proves that they are valuable. Ideas are not difficult to evolve, yet they are often worth a valuable consideration. Neither buyer nor seller consults the cost of production, else there would be no great variance of value, no sudden and widespread rise or fall of prices. It would be difficult to find more than the merest traces of utility in those works of art and luxury which possess the highest value. And if we look for value in desirability, both land and water, and a myriad of other things which naturally form the first objects of man's desires, but which nature has supplied to him with liberality, arise in view to defeat the search.

Unable to resolve value as a whole, the Economists attempted to manage it in parts.[1] They split it into pieces, calling them variously temporary, permanent, positive, negative, relative, intrinsic, extrinsic, market, monopoly, natural, exchange, scarcity, cost, and speculative, value, until each fragment was small enough for their purpose. But in vain; there always remained an element of value which their alchemy could not dispose of, and which con-

[1] When the Turks had conquered Greece and occupied Athens, after demolishing it, they attempted to rebuild it; but the stones of which the public buildings were made, and which the ancients had handled with ease, this half-civilised race found too large to lift back to their places. They were therefore compelled to break them up, and thus perished most of the beautiful and symmetrical architectural triumphs of antiquity.—Leake's "Topography of Athens," p. cvii. London, 1821. 8vo.

stituted the enigma of their science.[1] Such was the importance of this element that Bastiat afterwards said of it: "Every truth or error which this word 'value' introduces into men's minds is a social one."

Some approach was made to the solution of value when its normal variations were observed to coincide with rarity or scarcity; these conditions being merely the rude forms of a numerical relation.

That the nature of value was, indeed, numerical, was distinctly indicated by the illustrious Montesquieu, whose familiarity with both the monetary history of Rome and John Law's recent experiments in France enabled him to declare that, "fundamentally, price depends entirely upon the numerical proportion of commodities to monetary symbols," and "as the total sum of money is to the total sum of commodities in trade, so is a fraction of the one to a like fraction of the other." But in his brief treatment of the subject he is often dogmatic and sometimes contradictory, and he cannot be said to have satisfactorily determined the principles upon which it rests.

To the gifted Bastiat was left the task of successfully demonstrating that value did not reside in any object, and therefore could not be an intrinsic attribute of matter; that it was a relation between different objects; and that this relation only appeared during the act of exchange. Hence followed his definition that "Value is the relation of two services exchanged."[2]

[1] Bastiat has a good chapter on this subject in his "Harmonies of Political Economy."

[2] "Harmonies," p. 108. Jevons appears to have approached equally

But, as Jean Baptiste Say very truly remarked, "It is not given to any one to reach the confines of science: philosophers mount on each other's shoulders to explore a more and more extended horizon." When Bastiat discovered the general nature of value he stopped. He found that it was a relation, and that it only appeared in exchange. Beyond this point he did not venture.

Yet no man was ever nearer to the whole discoverable truth without discovering it. He proved that—"Value does not reside in matter;" "nature has nothing to do with value;" "value is a relation;" "value implies measure;" and "value is to political economy what enumeration is to arithmetic."[1] Had he taken another step forward he could scarcely have failed to perceive that value was itself an arithmetical relation; for it can only be expressed in numbers. But death took him away before his immortal treatise was completed.

Not only is his explanation of value incomplete, it is not broad enough. Why should value be restricted to an exchange between two services? Why does it not exist—as Montesquieu suspected—between all services (and commodities) which are being exchanged or liable to be exchanged?

The edifice which shelters us, for example, is not exchanged, nor being exchanged; yet it has value; and

near to the true solntion of value when he regards it as a "proportion." "Primer of Political Economy" and "Money."

[1] Bastiat, "Harmonies of Political Economy," pp. 104, 107, 125, 127, 133.

although that value cannot be ascertained without offering to exchange the edifice for something else, it may be determined in a rude way by referring to the value of similar edifices which have been exchanged at the same place and at nearly the same time. Value, therefore exists not merely between two commodities or services, but between all of such; and it exists not only between things which are being exchanged but between all things exchangeable.[1]

The notion, common to many of the Economists, that money measures the value of only those things which are in market, up for sale, or being exchanged, is possibly derived from contemplating the disparity between the magnitude of all commodities and available services and the littleness of the measure—the sum of money—which forms their nominal equivalent. But the sum of money is of its present magnitude simply because it was so chosen to be, or so left to become; it can be made larger or smaller at man's pleasure, whenever he chooses to exercise over it the same dominion that he has chosen to exercise over yard-sticks and pint-pots; that is, whenever he chooses to define and limit by law the magnitude of the measuring unit, which, in the case of money is, and can only be, from the nature of things, the whole sum. Such increase or diminution of the sum of money will not change the value of other things;[2] it will only change the expression of it in the fractions of money

[1] Consult Montesquieu's "Esprit des Lois."

[2] Mill's "Political Economy," iii. 7, 2, p. 298, says: "Causes which affect all commodities alike do not act upon values."

—to wit, price. Nevertheless, this price, or value expressed in money, can only be ascertained by the act of exchange.

In the same manner, the pint-pot is of its present size because it was so chosen to be; it would answer the same purposes, and prove equally efficient, no matter what its size was made; only in case of alteration, the expression of liquid measure in total pints would be different. The numerical relations between all other things would remain precisely the same as before.

Whatever may be the origin of the notion that value only exists between things that are being exchanged, it is evidently erroneous. The fact is that nothing is *being* exchanged. It never can be truly said to be twelve o'clock, for time passes eternally, and whilst we speak, nay, whilst we observe the clock, time has elapsed and escaped fixture. The act of exchange, indeed all actions, are equally unfixable, and if value pertained to objects only during the act of exchange, it would practically not pertain to them at all. Value must, therefore, relate to things exchangeable as well as to those which are regarded as being exchanged; in other words, to all commodities and services.

The soundness of this conclusion is proved by the fact that when an exchange is being made the value of all things is held in view through the medium of price. No man will sell a horse, for example, until after he ascertains not merely what the intended buyer but what all other men, within reach, will give for it. This, the latter determine, not with direct reference to the cost of production of horses,

nor to the degree of their utility, nor to their lastingness nor desirability, nor to the prices of the corn, land, and labour which have contributed toward their cost, nor even to the supply and demand for horses; but simply to their price or value in money. This price connects the horse, in a rude way, with all other exchangeable things at hand, and, by means of commerce and emigration, with all exchangeable things in the commercial world. It does not follow from these premises that the price of a similar horse would be the same everywhere, because the money of each country consists of a sum by itself, a sum which is only remotely connected (if at all) with somewhat similarly constituted sums in other countries, and also because the relation between the supply and demand for horses may not be the same in any two places.

Thus far we have seen that value is a term of the highest commercial and political importance, yet one whose definition is nowhere to be found in the law; that the term has passed through many meanings, due to its long-time use and the vicissitudes of European civilization; that the Economists regarded it as an attribute of matter; that Bastiat proved it to be a relation between two exchanged things; and that further reasoning shows it to be a numerical relation, which in a rude way exists between all exchangeable things, appears with precision during the act of exchange, and is to be measured most readily by means of money.

If it be asked, What is the precise character of this numerical relation called value? the reply must be that

although it depends upon many uncertain and incalculable elements, as human necessity, desire, passion, speculation, and caprice, yet, that, as shown in another part of this work, it is essentially an equitable relation, or one that between equal parties has a tendency to become equitable; that it is extremely variable;[1] that it is extrinsic to and not connected with the physical properties of, nor difficulty of producing, commodities; and that it is susceptible of precise expression in numbers, and in numbers only.

Being thus susceptible of expression, it is sufficient for the purpose of dealing with it practically if value be regarded as a fourfold numerical relation which involves the unknown ratio between the demand and supply of one commodity at a given place and time, as opposed to the unknown ratio between the demand and supply of another commodity at the same place and time; and that by comparison and analogy it extends to and between all commodities and services.

[1] During the American Civil War a member of the New York Stock Exchange made a profit of several thousand dollars by accepting both of two offers which were made by different persons at almost the same instant of time, the one offering to sell certain railway shares at a lower price than the other offered to buy them at. This variation of value and double bargain must all have taken place within a half-second of time. The writer has known mining shares in San Francisco in 1878 to double, or diminish one-half in value within a few hours. He has heard of an instance in the "early days" of California when common hay-scythes rose in value from 25 cents (one shilling) to $100 (£20) each in the course of a few days, and of others when plug tobacco fell from a dollar (4*s.*) a pound to nothing, and was cast into the streets as valueless.

In other words, value, though difficult to define, is not immeasurable. In this respect it resembles time, space, gravity, and the other primordial conditions or relations of matter. The measure each of time, of space, of gravity, is an arbitrary rule, adopted by law; and so must be the measure of value.

Although the law at present declares that this measure of value shall consist of one single coin, it really and in point of fact consists of all coins and notes circulating within scope of the law. The law can, indeed, render one single coin the measure of value; but it can only do so by prohibiting and banishing all other coins. This it does not do. On the contrary, after declaring a single coin of a certain description to be the measure of value, it orders several hundred millions of similar coins to be fabricated; it makes them each and all payable for taxes and fines, and exchangeable for commodities, services, and each other, and thus renders them all together, in lump, one measure of value; because, as money relates to all things, and value is expressed in money, so value relates to all things, and not to any one thing by itself. In other words, such is the nature of value, such the law, and such the operation of the system of exchange, that the pieces of money cannot be used separately; they must be, and in fact always are, used collectively; so that the actual unit or measure of value is the whole legal or tale sum of money, of whatever material or materials it may be composed.

We know already that the law has not specifically limited this measure. But has it no limits whatever? Is

the measure of value a mere abstraction? No. It has certain rude and indefinite limits, which have been left to chance, commerce, caprice, war, legislation, etc. These limits are roughly known as the demand and supply of money. By rendering so much money as may be found to express the value of any object of man's desire an effective offer in exchange for such object, the law has made the demand for money illimitable. On the other hand, the supply of money is left to be determined by the march of conquest, the progress of slavery, the vicissitudes of mining discovery, the development of mining economy, the social affairs of distant nations, the happening of war, the currents of trade, the progress of the arts, the course of legislation in various countries, the designs of financiers and speculators, the melting of coins, the wear, tear, and loss of coins, the profits of banking, and numerous other uncertain events and conditions.

Hence we have for value a complex and obscure numerical ratio of exchange, difficult to define but precisely measurable by money; and for money, a measure susceptible of precise limitation, but, as the case stands, actually left to vary between illimitable demand and uncertain supply.[1]

[1] Value only appears in the social state, and merely applies to exchangeable things. When used with respect to health, religion, etc., or anything connected with man in an isolated state, it is a metonym for worth, as when we say a man keeps a good table, meaning that he keeps good viands. Similarly, the value of money is an expression meaning the rate of interest thereon.

Value, being a definitive relation, cannot with propriety be coupled with an indefinite article. "A value," for example, is erroneous.

Value has an active; worth a passive meaning.

The quality "worth" is what a thing has in itself; its value is determined by what it does for you. Worth is intrinsic; value depends upon circumstances.—From Graham's "Synonyms."

The substitution of "value" for "price," and the use of "value" as a noun or substantive, though obvious, are very common, forms of error.

CHAPTER VI.

MONEYS CONTRASTED WITH OTHER MEASURES.

Besides the difference, already shown, which exists between unlimited moneys and limited measures, there are differences between moneys and other measures even when both are limited—1. Money is used to determine the value of numberless things at the same time; a yard-stick to determine the length of one thing at a time—2. Money determines a dynamical and variable relation; other measures, a statical and fixed one—3. Money determines a numerical and extrinsic relation; other measures determine an inherent and intrinsic attribute—4. Money determines an equitable relation; other measures determine attributes which have no connection with equity—5. Moneys have a tendency to instantly amalgamate, and two or more moneys will merge into one money of the combined volume of both, which is not the case with other measures.

IT was shown in a previous chapter that money, as it is at present constituted in the laws of the United States, and as it is otherwise constituted in the laws of the several other countries of the world, differed from all other measures in the respect that it was not specifically nor precisely limited, defined, nor fixed in the law; whilst the measures of length, weight, volume, area, etc., are actually thus limited, defined, and fixed. Owing to this lack of limitation and fixity, the whole sum of money, which is the measure of value, is liable to be altered from time to time by various uncontrollable and uncertain events; thus ex-

posing the important relation of price to sudden and violent fluctuations.

In addition to this difference—which only applies to money as it now stands in the law—there yet remain other differences between money and other measures. These differences apply to all moneys, whether limited or not, and it is deemed useful to notice them in this place.

1. A money is used to determine a numerical relation between itself and all other things, including other moneys, at one time. A yard-stick, for example, is used to determine a numerical relation between itself and one other thing at one time. The former is a multiple or complex measure; the latter a unital or simple measure. Money cannot measure one thing without at the same time measuring all things; a yard-stick may measure one thing without measuring any other. The length of one object does not depend upon the length of other objects; the price of one object does depend upon the price of every other object.

2. Money is used to determine a dynamical and variable relation; other measures to determine a statical and fixed one. Value varies with time and place; it also varies with the frequency of exchanges. Hence value is a variable relation, and it is this variable relation which money has to determine; whilst that which a yard-stick determines is an invariable and fixed relation. The determination of a yard-stick will last for ever, whilst a determination of money in price is only valid for a given time and place.

3. A measure of value can only be useful in the social state; a measure of length may be useful in the isolated state. This arises from the fact that length is an inherent and intrinsic attribute of matter; it is inseparably connected with it, and has no tendency to vary; whilst value is extrinsic and relative, and continually tends to vary. Length can be determined by comparison; whilst value can only be measured by exchange.

4. From the social function of money arises its relation to intellect and equity. There can be no such thing as an equitable or inequitable length; there may be an equitable and inequitable value. Length does not vary with the intellectual attainments, the knowledge, information, opportunities, virtues, and power of men; value does. When these advantages and attributes are unequal, the determination of value cannot be equitable; one party is certain to obtain an advantage over the other. When they are equal, value becomes an equitable relation. Whether the determination of value be equitable or inequitable its measure should be constant; for in the case of an otherwise equitable exchange an inconstant measure will make it inequitable; and in the case of an inequitable one an inconstant measure will only add one inequity to another, as is the case now with all exchanges.

5. Length and every other attribute of matter which is susceptible of numerical expression varies *directly* with numbers. Value is a numerical relation which varies inversely with numbers. Hence two yard-sticks cannot at the same time and collectively measure one relation of

length; whilst two moneys may at the same time and collectively measure one relation of value. Two moneys used collectively become instantly merged into one another, and thus become one money; two yard-sticks cannot be merged into one another, and therefore cannot be used collectively. They will always remain two.

CHAPTER VII.

LIMITATION IS THE ESSENCE OF MONEYS.

Resemblances, actual and desirable, between money and other measures—All measures of precision are artificial—To become a precise measure money must also be of artificial dimensions—All other measures are susceptible of exact numerical expression—To become a true measure, money must be defined numerically—The efficiency of all measures, money included, depends upon the exactness of their limits, not the substance of which they may be composed—The limits of other measures are not left to be determined by supply or demand, nor should be those of money.

IT has been shown in previous chapters in what respects money differs from other measures; it will now be shown wherein it resembles or should resemble them. By measures, of course, is meant measures of precision.

1. All measures of precision are of artificial limits. Nature affords none. No natural productions are of an invariable length, volume, magnitude, area, or weight. There is a metrical system set forth very minutely in the pages of Manou, a Sanscrit lawgiver of, or before, probably long before, the sixteenth century B.C. The basis of this system is a specified kind of mustard-seed. In order to ascertain the basis of this system, several modern investigators have each of them weighed many thousand mustard-seeds and deduced an average weight from these numbers; yet

no two of their results agree more than approximately.[1] Even the basis of the French metrical system, which is the ten-millionth part of a quarter of the meridian actually measured on the earth's surface, has been found to be variable.

If money were a measure of precision, its limits would also have to be artificial and fixed: and as at present they are not artificial and fixed, but left to be determined by chance or design, money is not at present a measure of precision, although equity demands that it should be one.

2. All measures of precision are exactly numerical, that is to say, they are susceptible of exact numerical expression. A measure which is not capable of being exactly and numerically expressed is not a measure of precision. Money, as it now stands in the law, cannot be thus expressed, for no one can tell exactly, nor even approximately, what the whole sum or limit of it is in any given country, nor in all countries combined. It is, therefore, not a measure of precision; yet it ought to be.

Suns, moons, day's-journeys, posts, bow-shots, stone's-throws, and paces are measures of length; armsfuls, loads, and cargoes are measures of volume; and a hide is a measure of area. These measures cannot be expressed exactly; they are not measures of precision; and none but savage, half-civilised, or unprogressive communities rely upon them for measures. Money, as it stands at present, cannot be expressed exactly; it is not a measure of preci-

[1] For the details of these experiments consult Wilson's "Ariana Antiqua."

sion; and is therefore not suitable for the requirements of highly refined, civilised, and progressive communities.

3. A measure need not be composed of a commodity. Nor need money be. The efficiency of a measure does not depend so much upon the substance of which it is made as upon the exactness of its limits; and this is as much the case with moneys as with other measures.

4. The limits of other measures are not left to be determined by either supply or demand; neither should the limits of money; but as the law now stands, these limits are left to be formed by insatiable demand on the one side, and fluctuating and unforeseeable supply on the other. Unless money is of less importance to society than yard-sticks or pint-pots, it would seem that it should be described and limited by law with at least equal precision.

5. The essence of a measure of any kind is limitation—indeed, this is the meaning of the term itself; and the more exact these limits are susceptible of being defined in the law, the more efficacious the measure becomes. This is the case with money. Indeed, the very essence of money is limitation; and such is the origin of the word nomisma. The more exact the limits of money are defined in the law, the more equitable will it become in its operation upon prices and the dealings between man and man.

CHAPTER VIII.

THE PRECESSION OF PRICES.

Explanation of Price—It cannot be expressed in a given coin or sum of coins independent of other coins—It varies directly with the whole numbers of money—Logically a doubling of money will instantly effect a doubling of all prices—In point of fact, this doubling occurs in time, and the time varies with different commodities—This variance subject to natural law—Such law called the Precession of Prices, or Movement of Prices in Time—Results of practical observations on the working of this law—Danger of employing a money without fixed limits—Other practical observations concerning moneys.

PRICE is a triplex numerical relation. It involves the unknown numerical relation between the demand and supply of a commodity at a given place and time, as opposed to a known or assumed sum or supply of money.

Price cannot be definitely expressed in a single coin or a sum of coins independent of other coins; because coins are legally interchangeable one for the other. When notes are legally interchangeable for coins and coins for notes, or when bullion, coins, and notes are all interchangeable, as is the case at present in the foremost countries of the world, then price can only be expressed in the total sum of such composite money, or the definite fractions thereof.

"Price," said the profound Montesquieu, "depends fundamentally upon the numerical proportion of commodities to symbols."[1] This is only a brief way of saying that

[1] Montesquieu's "Esprit des Lois," xxii. 7.

value is a numerical ratio between commodities; and that price, which is its expression in money, varies with the numbers of money.

The variation of price is *directly* with the numbers of money; whilst the expression of the value of money in commodities varies *inversely* with the numbers of commodities. Thus, the more numbers of money or the fewer commodities, the greater price; and the fewer numbers of money or the more commodities, the lesser price.

The logical consequence of this rule is that, for example, a doubling of the sum of money will result in a doubling of price; and all the logicians, from Locke to Mill, have come upon this deduction and hastened to enlarge it.[1] But here they have done violence to Nature, whose movements are performed only in time; an element of which logic has usually taken but little account. It is upon the movement of prices in time that the Precession of Prices depends.

It was asserted by David Hume, and admitted by Lord Overstone and John Stuart Mill, that whilst the volume of money might be increased or diminished instantly, the resulting movement of prices would only occur after an interval of time.[2] Mr. Mill appears to have supposed that this interval of time was only that which was sufficient

[1] Mill's "Political Economy," iii. 8, 2, p. 299. McCulloch's "Political Economy," 217, 401.

[2] Hume's Essays; Lord Overstone's "Thoughts on the Separation of the Departments of the Bank of England," 1840; Mill's "Political Economy," iii. 13, 4, p. 333. Tooke, in his "History of Prices," says something of the same kind.

"for the increased supply of money to reach all markets, or, according to the conventional metaphor, to permeate all the channels of circulation." [1]

The partial regulation to which money was subjected in the United States during the Civil War drew the author's attention to this interesting subject, induced him to observe carefully the actual operation of money upon various classes of commodities and services, and led to the discovery on his part of the natural law which he has termed the Precession of Prices.[2] The observations made were published in the New York "New Nation," during the year 1864.

From these observations it appeared that in the United States, following an increase of money, and taking no account of the very brief time involved in geographically distributing the increase, it nevertheless required a period of several years for all prices to conform to the increase. During this time the prices of a certain few classes of commodities or services doubled, after which the prices of others doubled, and so on successively, until the doubling of all classes was completed. In other words, the doubling of prices was not simultaneous, but took the form of a precession, the order of which was somewhat as follows:—

1. Bullion. 2. Stocks and bonds. 3. Shares of incor-

[1] Mill, iii. 8, 2.

[2] At that time I did not know that this phenomenon had already attracted the observation of the illustrious Englishmen mentioned in the text. That neither of them followed it experimentally was, perhaps, due to the immense labour involved in the work under a composite system of money. Like many other laws relating to the science of money, this one is only apparent under a regulated system.

porated companies. 4. "Staples," or crude and imperishable commodities. 5. Merchandise, such as perishable commodities, crude articles of subsistence, etc. 6. Fabrics, such as machinery, manufactured food, luxuries for wear, etc. 7. Landed property or real estate. 8. Skilled labour or artisans' wages. 9. Unskilled labour, or the wages of labourers, soldiers, seamen, etc. 10. Professional services, or the emolument of authors, inventors, lawyers, engineers, clergymen, accountants, and other professional and clerical classes.

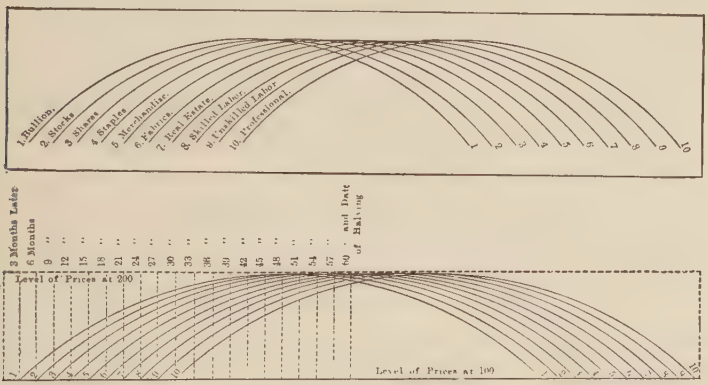
The interval between the doubling of the prices in these various classes of commodities or services was not uniform; in other words, supposing ten years to be the time required for the entire doubling of prices, and the classes of commodities and services to be ten in number, it would not follow that each successive year would add one to the classes with doubled prices. After once commencing to feel the effect of the increased sum of money, some classes doubled in price quicker than others. Leaving this irregularity out of view, and supposing that if during the upward movement of prices, say after the fifth year, the money of the country had been suddenly diminished to its original sum,[1] the Precession of Prices would have appeared as in the diagram on the opposite page.

From this diagram it will be observed that while the prices of some commodities are falling, those of others may be rising, and that both movements may arise from a single

[1] And assuming population and trade, and therefore the demand for money, to have remained unchanged.

original impulse; the falling commodities having passed through the rising period, and the rising commodities being yet within it. This is, in fact, what did occur, though not in the symmetrical order delineated.

Upon examining the details of this induction with attention, it was observed that the order of precession conformed to the marketability of, or ease of selling or exchanging, the various classes of commodities and services enumerated.



Thus, bullion, belonging to Class 1, was more readily saleable than a Government bond, Class 2, or a railway share belonging to Class 3, or a bale of cotton, belonging to Class 4; whilst the latter was more marketable than a barrel of flour belonging to Class 4, or a piece of cloth, belonging to Class 5; and so on. All kinds of moveable commodities were more readily saleable than land; whilst land commonly commanded a readier market than labour or professional services.

The operation of this principle reveals the danger of all empirical measures designed to expand or contract the

money of a country, and the folly of exposing money, as it is now exposed, to the voluntary or chance expansions or contractions occasioned by commerce. Before meddling with money it is obviously necessary to determine the natural laws which govern its influence upon prices. From the observations made by the author it appears that to increase money, or permit it to increase, is not merely to enhance all prices simultaneously: it is to enhance the price of some things in point of time before others; it is to benefit certain classes of the community at the expense of the remainder; it is to derange and throw into disorder all the varied and complicated interests of society. Contrariwise, to diminish its sum, or to permit it to diminish, is to depress the prices of certain commodities sooner than others, and to occasion a derangement of affairs even more perilous to society; for it so happens that, although theoretically labour benefits from a general fall of prices (it being the last, in point of time, to feel the effects of a diminished sum of money), it practically suffers even more than during a general rise of prices, because a fall of prices hinders commerce and depresses production,[1] and thus deprives labour of employment or tangible existence.

Hence, the only kind of money which is demanded by the interests of the productive classes is that one which is

[1] During a fall of prices all enterprises are checked, among them gold and silver mining enterprises, or searches for the precious metals upon a commercial basis. So that so long as money is made of these metals, every accidental scarcity of them will promote greater and greater scarcity. Contrariwise, during a rise of prices, mining enterprises are stimulated, and plenty of metal thus begets renewed researches for

also demanded in the name of general equity—a money of a fixed sum; fixed either absolutely or relatively to population or production; but fixed.

The observations alluded to above brought to light other noteworthy peculiarities in the movement of prices, viz.—1, That whilst war, harvests, production, speculation, and the other principal influences, other than money, which affect prices, may affect the prices of many things, they do not and cannot either separately or collectively affect the prices of all things; 2, that whenever they enhance prices in one direction they depress them in others, and *vice versâ;* and 3, that no cause or influence can enhance or depress the prices of all things, either simultaneously or in the order of the Precession of Prices, except an increase or diminution in the whole Sum of Money.[1]

more. With a commodity-money, it is always a dearth or a feast; and in these days of machinery and associated capital this fact has a significance which it never had before.

[1] Tooke spent a lifetime in trying to refute these simple and almost self-evident principles, and he failed. Yet the fallacious doctrine that commercial depression may be caused by "general over-production" (a myth) is still prevalent. Weston, p. 189, calls Tooke's work "mischievous activity."

CHAPTER IX.

REVULSIONS OF PRICES.

Coins are not made of gold and silver because of the intrinsic qualities of these metals—The practice arose from the superior constancy of their quantity as compared with other substances, and during eras when artificial moneys of fixed quantity were politically impracticable—Historical examples—The precious metals were never commonly and permanently used for coins until the conquest of Europe by Rome—When the first effects of this conquest subsided the precious metals fell into disuse as materials for coins, until the Spanish conquest of America—The effects of this conquest, and its concomitant great supplies of gold and silver to Europe, upon prices, have been sustained by means of so-called convertible paper notes—This system incapable of further extension—Necessity for reform in money—Fluctuations of prices which have resulted from convertible note systems—Their disastrous and baneful effects.

SAYS Montesquieu, "That which is the common measure of all things should of all things be the least subject to change."[1] It has ever been the theme of ill-informed writers that money came to be made of gold and silver coins because gold and silver metal possessed certain intrinsic qualities, such as brilliancy, incorrodibility, portability, divisibility, reunitability, and the like. But these qualities did not prevent the Chinese, the East Indians, and the Greeks from again and again voluntarily putting

[1] "Esprit des Lois," xxii. 3.

these metals away and using in their stead other substances for coins or monetary symbols—substances the supply of which, like clay, copper, or paper, were less limited by nature, and therefore more amenable to the art of man. Indeed, it cannot be shown that either gold or silver ever was commonly or permanently used for money in any country of the world prior to the conquest of Spain by the Romans. It was this event that brought to Rome a sufficient accumulation of silver to assure a certain stability in its value, and it was this stability of value that determined its permanent adoption as the material of coins, and not the intrinsic qualities of the metal. Previous to this time the Athenians had, indeed, owing to their control over the productive silver mines of Laurium, employed a money consisting chiefly of silver coins; and the Macedonians had used for this purpose both gold and silver, which they derived from Alexander's plunder of Asia. But in neither of these cases can the monetisation of the precious metals be regarded as having lasted permanently. The mines of Laurium were closed before the time of Pausanius, and were not reopened until A.D. 1870.[1] Alexander's stock of the precious metals soon became dispersed; and from this time until the extinction of Greek liberty the material of the moneys of Greece was frequently changed. After the Romans conquered the country, its moneys were made permanently of copper.

Nor was the stability of value which, after the Roman conquest of Spain, led to the adoption as money, first of

[1] "History of the Precious Metals" and "History of Money."

silver, and afterwards of silver and gold coins, a permanent or unalterable attribute of these metals, but a purely adventitious one, derived from the immense quantity of them which the Romans had been enabled to collect, primarily by plunder, and afterwards and much more extensively by means of slavery. It is now but too well ascertained that the tragical fate which befel America in the fifteenth and sixteenth centuries had already overtaken many portions of Europe during the period B.C. 200—A.D. 300. In America the Spaniards immolated in the mines fifteen millions out of some thirty millions of the native inhabitants; in Europe the Romans had probably sacrificed fully as many.[1]

The influence of these last-named historical events marks the limits in the two eras of comparative stability which have attended the value of gold and silver. The first era commenced and ended with Roman conquest and slavery. The second era commenced and ended with Spanish conquest and slavery. When the Roman Empire declined, the Level of Prices which its violent acquisition of the precious metals had established was sustained as long as possible by means of over-valued coins, leather moneys,[2]

[1] Gibbon and Merivale estimate the population of the Roman Empire in Europe in the time of Augustus at 60 millions. At the period of the Hegira it was not over 30 millions. See Montesquieu and authorities therein: also the author's "History of the Precious Metals," and "Rape of the Earth."

[2] In the chapter on Leather Moneys, in my "History of Money," more than a dozen emissions of such moneys are shown to have been made in the various countries of Europe during the Dark Ages.

corn moneys, and a great variety of similar devices; so that it may be said as justly of the Dark Ages as of the period prior to the conquest of Spain, that neither gold nor silver was commonly and permanently used for money in any country. It was not until the second era of their comparative stability of value commenced (this was after the conquest of America) that gold and silver, at or near their bullion value, were again used commonly and permanently for money.

When the Spanish American Empire declined, the level of prices which its violent acquisitions of gold and silver had established was sustained by means of so-called convertible, afterwards combined with inconvertible, paper money; and this has continued up to the present day.

The signs that this level can no longer be sustained are making themselves more and more apparent every day. Many of the so-called convertible systems of paper money have become in reality hopelessly inconvertible ones. This is certainly the case in Russia, Austria, Turkey, Brazil, Buenos-Ayres, Japan, and some other countries; it is probably also the case in the United States, notwithstanding the pretensions of metallic resources periodically set forth by the Treasury.[1] The mechanical devices for accelerating

[1] The Government of the United States is now so strong and rich that, in the scramble of "specie-paying" nations for the world's scant and dwindling stock of the precious metals, it probably has the power to secure more than its due share. In other words, it is no longer the Bank of England that controls the flow of the precious metals. The Treasury and Banks of the United States are capable of exercising an important influence upon this movement. It ill becomes the possessors

the efficiency of money have received no important addition since the general introduction of railways and telegraphs. The clearing-house system (which, by the way, is of long standing) does not appear to be capable of further extension. The annual supplies of the precious metals, to which a sporadic impetus was imparted by the accidental discovery of the Californian and Australian placers, have resumed their previous downward movement.

Those whose blind faith in the stable value of gold and silver cannot be shaken by considerations which cover such great periods of history as the rise and fall of the Roman and Spanish-American Empires, or who may not be disposed to admit that the present decline in the production of gold and silver is final, need only to consult the fluctuations of price, in any commercial country during the past half-century. These will show that even the admitted comparative stability in the value of the precious metals has varied to the extent of four or five times.

We need not go far to ascertain the causes of these fluctuations of prices. Although not sufficiently exact to furnish grounds for researches into the nature and function of money, the statistics of money serve very well to exhibit the main cause of the fluctuations of price.

Commencing in 1775 with $4.40 of money per capita of population, the United States, for example, had $6.25 in 1791; this decreased to $5.85 in 1792; increased to $7.40

of such power to permit the employment of the juggling tables of coin "reserves" published by the Director of the Mint and Comptroller of the Currency.

in 1794; decreased to $4.60 in 1798; increased to $5.30 in 1800; decreased to $4.60 in 1803; increased to $5.30 in 1804; decreased to $5.20 in 1805; increased to $6.40 in 1808; decreased to $6.10 in 1811; increased to $8.80 in 1813; decreased to $8.00 in 1815; increased to $9.20 in 1819; decreased to $9.00 in 1820; increased to $9.20 in 1825; decreased to $7.20 in 1830; increased to $14.00 in 1837; decreased to $12.50 in 1838; increased to $13.40 in 1839; decreased to $6.90 in 1843; increased to $11.10 in 1848; decreased to $10.50 in 1849; increased to $16.40 in 1855; decreased to $16.10 in 1856; increased to $16.70 in 1857; decreased to $14.00 in 1858; increased to $15.40 in 1859; decreased to $13.70 in 1861; increased to $28.50 in 1864, and, with some unimportant variations, decreased to $17.00 at the present time.[1]

Surely no one will contend that the alternate periods of increasing and decreasing, or, as the present writer has termed them elsewhere,[2] of crescendo and diminuendo prices which these figures bespeak, have been beneficial to society: no one will claim that the undeserved changes of individual fortune which they produced, or that the many social distresses and disturbances which they occasioned, were desirable. On the other hand, that these revulsions were entirely preventable and avoidable can scarcely be doubted.

[1] "History of the Precious Metals," pp. 216-17.

[2] In the "New York Economist," in 1868; in the first edition of Johnson's Encyclopædia, article "Currency;" and in several other publications of the period 1864-73.

The adventitious gains and losses occasioned by these fluctuations in prices have led to two very deplorable classes of results. First, they have subjected all mercantile transactions to extraordinary and unnecessary uncertainty; effaced the distinction which formerly existed between commercial adventure and stock-jobbery; and fostered a spirit of gambling and jockeying, so deeply rooted in the community that not all the pulpits in its midst have hitherto been able to check it. Second, they have tended to shorten credits; depreciate the commercial value of honesty, foresight, and skill; discouraged commercial enterprise; and led to a baneful growth of irresponsible corporations and limited liability companies.

If society has thriven and progressed in spite of these obstacles, it is because the productive resources which have furnished the basis of such progress have hitherto been sufficiently numerous and ample to overcome a bad system of money, and not that such a system has been without its effects upon the general welfare. But these resources are no longer numerous and ample. There are no more virgin lands or forests, no more free "cattle-ranges," no more unworked placer mines, etc. The New World is deflowered, and is fast settling down to the industrial conditions of the Old.

In the Roman Commonwealth, which was provided with an artificial, permanent, and unalterable measure of value, the debtor had so little excuse, beyond his own lack of foresight or skill, for failing to meet his engagements, that the law, without working any noticeable hardship, accorded

to the creditor a claim not only upon the former's property but his person.

In modern countries the measure of value is so uncertain and fluctuating that no man cares at to-day's prices to sell on long credit or to rent or lease upon long terms. Bank loans, for the most part, are limited to a few days;[1] and long credits of any kind are regarded with so much apprehension that in many cases they are forbidden or defeated by law.[2]

If it be answered that whatever perturbations of prices have occurred, they were not due to the unstable value of the precious metals, but to the promotion of paper notes to the dignity and function of money, the reply is that but for such promotion the perturbations would have been still greater. The interests of society are so strongly opposed to unstable prices that it resorts to every expedient for the purpose of keeping them steady; and it is only when an efflux of the precious metals—occasioned by peremptory demand elsewhere, or by fears of war—takes place, that paper money systems have ever obtained a footing against

[1] In 1867, while Director of the Bureau of Statistics, I obtained a return from most of the National Banks, which showed that the average period of discounts was about fifty days—the first return of the sort ever obtained.

[2] Such is the operation of the Statutes of Limitation in America relative to mortgages, loans, leases, etc., by private persons, and such the operation of squatter laws and customs, and of bankruptcy acts. On the other hand, Government and corporative loans and leases for lengthy periods have been upheld in law. There is a contradiction in these two classes of practices.

the prejudice which they had to encounter.[1] Paper notes have often in derision been termed the "Money of Revolutions;" but they were never adopted by the revolutionists of any country until after the precious metals had fled away and left such country exposed to more than the accustomed hazard of unstable prices.

[1] A noteworthy efflux of bullion took place from the United States upon the occasion of the resumption of coin payments by the Bank of England in 1821. For remarks on its effects see Gallatin's Treasury Report. Another noteworthy efflux occurred upon the breaking out of the Civil War in 1861.

CHAPTER X.

CAUSES AND ANALYSIS OF A RATE OF INTEREST.

Causes of a rate of interest—Temporary supply of money—Rate of profit in trade—Rate of profit in production—Rate at which animals, plants, and minerals increase—Rate at which the means of subsistence increase—Subsistence ultimately governs the rate of interest—Subsistence also governs the growth of population; so that population and the rate of interest are related—When to the rate of interest, arising from increase of subsistence, there are added allowances for risk, taxes, and the cost of superintending loans, the market rate of interest follows—Present tendency of the market rate—Ignorance of American ministers of finance—Usury laws.

1. THE rate of interest for money is due, immediately, to the temporary or local supply of, as compared with the temporary or local demand for, money as a commercial loan. In case no recent change has occurred in the supply of or demand for money, the rate of interest depends upon:

2. The net rate of profit in trade. When this is high, the merchant, in order to maintain or extend his business, can afford to pay a high rate of interest for money. When it is low he can only afford to pay a low rate. The net rate of profit in trade—and when there is no trade, the rate of interest—depends upon:

3. The rate of profit in production, as in agriculture, the fisheries, mining, manufactures, and the means of trans-

portation. The profit in production might be affected temporarily or locally by the supply compared with the demand for products; but in the long run it must depend upon:

4. The rate at which animals and plants increase and minerals are produced under the hand of man; in other words, the rate at which the means of human subsistence increase.

This, then, is the ultimate cause of a rate of interest: the rate at which the means of subsistence increase. Other things being equal, were this rate to double, the net [1] rate of interest would double; and were the rate of the increase of subsistence to diminish one-half, the net rate of interest would diminish one-half. In countries where such net rate of interest is high the market rate of interest for the safest class of investments of money is high, and *vice versâ*. Thus the leading savings banks of California, than which there are probably no safer institutions of the kind in the world, were able for many years to allow their depositors from 12 to 15 per cent. per annum for money; and even at the present time, after the substantial exhaustion of the very productive placer mines of that country, these banks are able to allow 6 per cent. To afford this, they must, of course, earn 9 or 10 per cent.

During the decline of the Roman Commonwealth and Empire, and throughout the Dark Ages, the turbulent condition of Europe so greatly diminished the rate of increase

[1] The net, as distinguished from the market rate of interest, which latter includes allowances for risks, taxes, and the cost of superintendence of loans, will be explained farther on.

of the means of subsistence as to cause a continuous decline of the population. This decline was arrested by the re-opening of commerce with the Orient, and changed from a stationary condition to one of growth by the establishment of a sea route to India and the discovery of America. From this notable instance, and other similar though less notable ones which might be adduced were it necessary, it follows that the growth of the means of subsistence not only governs the rate of interest, but also the rate of the increase of population. That it has the last-named influence is well attested by the laborious investigations of Malthus, Buckle, and others; but that it also possesses the former, has not, so far as I am aware, yet attracted the attention of moralists or financiers.

That the rate of the increase or decrease of population in any vast area and during long periods of time must conform very closely to the rate of the increase or decrease of the means of subsistence, may therefore be regarded as having been satisfactorily demonstrated. That the net rate of interest upon capital closely obeys the same influence is an induction that, however novel, may be accepted with equal confidence.[1]

[1] The principle that interest is derived fundamentally from the growth of animals and plants in time was first broached by the author in 1865, in an Essay entitled "The Rate of Interest in Great Britain and Elsewhere," published in the New York "Social Science Review" of that year. This principle was elaborated in his address on "Interest," to the National Insurance Convention of the United States at New York, 1872, published in the "Proceedings" of that body, and again in his Essay on "Usury and the Jews," published in San Francisco, 1879,

Having now determined that the ultimate cause of a rate of interest is the rate of the increase of the means of subsistence, and that such rate is, within very narrow limits, also identical with that of the increase of population, it remains to explain the difference between the net and market rate of interest for money.

In every loan of money the lender, in order to recoup himself, must charge in the form of interest as much as he could earn—excluding all risks and expenses, which latter must embrace the value of his own time—by employing his money in trade or production. Let us suppose this to be, at the present time and throughout the entire commercial world, 2 per cent. per annum.

In addition to this, he must charge enough to cover the risk of the non-payment of the principal. This rate widely differs in various countries. For the sake of illustration, let it be supposed that throughout the commercial world the risk is equal, in the long run, to 2 per cent. per annum. Taxes—when levied upon money or loans of money, in addition to taxes upon production or trade—(which latter form a part of the expenses of such production or trade) have also to be recouped to the lender of money, and must be added to the net rate of interest. Let the item of taxes

a copy of which last-named work is in the library of the British Museum. His fellow-townsman, Mr. Henry George, in his work on "Progress and Poverty," has adopted the author's postulate with reference to the origin of interest, but has nowhere given him credit for it. As to the uses which have been made of this postulate, by associating it with wages and other foreign subjects, the author entirely dissents both from Mr. George's methods and conclusions.

be supposed to amount on the average to half of 1 per cent. per annum.

Finally, to fully recoup himself, the lender must charge sufficient to pay him for the cost of personally superintending the loan or transaction—such as seeking the borrower, examining his credentials or securities, ascertaining or enforcing his own rights at law, notarial expenses, etc. If this charge be fixed as equal on the average to, say, half of 1 per cent. per annum on the sum of the loan, the average market rate of interest throughout the commercial world would be 5 per cent. per annum, as follows :—

	Per cent.
Net or unloaded rate of interest, due to rate of the increase of the means of subsistence, and agreeing substantially with the rate of the growth of population	2
Risk	2
Taxes on money or loans of money . . .	½
Cost of superintendence of loan, legal and notarial expenses, etc.	½
Market or gross rate of interest	5

In some countries, as in England, where the risk and cost of superintendence is comparatively small, more than one-half of the average market rate of interest, which is about 3½ per cent, consists of the net rate, or that arising from the net profit of trade, or increase of the means of subsistence. In others, as in Turkey, where the increase of the means of subsistence is substantially *nil*, and the cost

of superintendence, perhaps, not much greater than elsewhere, the market rate is due almost entirely to risk and taxes, which in that country at the present time are both high and fluctuating. In the United States the increase of the means of subsistence is probably about $3\frac{1}{3}$ per cent., whilst risk, taxes on loans of money, and cost of superintendence combined, probably amount to about $1\frac{2}{3}$ per cent. more, making the average market rate about 5 per cent.

While temporary and local circumstances combine to greatly modify the market rate, it is of the highest importance to know of what elements this market rate consists, in order to be able to accord to each modifying circumstance its due degree of importance. For this reason the analysis of interest herein made, besides being otherwise necessary to the design of the present work, will, it is hoped, prove to be of immediate and practical use to all persons connected with monetary transactions.

It may be affirmed with safety that generally throughout the commercial world the market rate of interest at the present time has a tendency to fall; and it is a knowledge of this fact on the part of financiers and capitalists that renders long loans under permanent and equitable governments, and upon good security, more desirable, and therefore more valuable, than short ones. Ignorance of this fact on the part of the finance ministers of the United States has cost that country during the past twenty years nearly as much as the whole present sum of the public debt. How much it has cost in the equality of fortune and welfare of its citizens would be difficult to compute.

After proving that, teleologically, interest arises from the rate of the increase of animals and plants, and is therefore founded upon the provisions of nature for the development of organised life, it need hardly be said that usury laws, though doubtless often enacted with benevolent intentions, have the defect of being at variance with the laws of nature, and therefore cannot be maintained during eras of societary growth and progress.

CHAPTER XI.

RATE AT WHICH EXCHANGES INCREASE.

Exchanges differ essentially in frequency—Their frequency indicated by the customary rates of profit attached to each class—They are all reducible to one denomination of frequency—When thus reduced it will be found that competition has compelled them all to bear the same rate of profit—That rate is the one at which all the capital in a country augments—The latter is identical with the net rate of interest for money—Given the net rate of interest in a given country, the following rates can be deduced: the average rate of the augmentation of all capital: the net rate of profit on all exchanges reduced to one denomination of frequency: and the net profit on each class of exchanges whose order of frequency is given.

IN great commercial countries the exchanges of capital are so numerous and diversified as to have hitherto discouraged analysis and arrangement. Writers on the subject have been content to allude to them collectively as the Exchanges, or the Volume of Exchanges. It is evident that no progress can be made in determining their relation to capital or to money until a more critical and scientific method of treatment is adopted.

The primary and most essential difference between one exchange and another is its ratio of activity or occurrence in time. One important class of exchanges—for example, the first sales of live stock, agricultural products, lumber, naval stores, fish, game, etc.—are comparatively infrequent. They wait upon the seasons, and, for the most part, only

occur once a year. Another important class—as the commercial sales of corn, cotton, wool, sugar, tea, coffee, etc.—are comparatively frequent. From producer to consumer, these commodities pass rapidly through many hands, and each time at a profit.

Between these two great classes of exchanges—agricultural and commercial sales—there are numerous others, each of a different degree of frequency. Beyond them there are yet others.[1]

It being assumed that, in the long run, the net annual profits upon capital in all industries, whether productive or commercial, and in all classes of exchanges—after making allowance for losses, bad debts, cost of superintendence, risks, deteriorations, taxes, rents, expenses, etc.—are brought by competition to the same level, it follows that the average frequency of any given class of exchanges is indicated by the rate of profit which they commonly yield.

Thus, if the ordinary net rate of profit on first sales of

[1] In 1866, whilst Director of the Bureau of Statistics, I made an effort to ascertain the frequency of land sales or conveyances, by requesting the county clerks, registrars, and recorders throughout the various States of the American Union to forward returns of the deeds which were placed on record in their offices from time to time; but the work of collating these returns proved to be too great for the small clerical force which could be spared from my office for the purpose; and it had to be abandoned. Over 150 of the returns—the first of the sort ever collected or published—will be found in my official report for November, 1866, pp. 13, 14. One of the fruits of this effort is the custom which has since grown up of the county clerks, registrars, and recorders to publish lists of conveyances and the terms of sale in the newspapers.

agricultural products is 5 per cent., and such exchanges of capital occur on the average only once a year, it follows that where the usual net rate of profit is $2\frac{1}{2}$ per cent., as, let us suppose, it is upon the sales of retail stocks of dry goods or draperies, the exchanges of the last named class of capital must occur half-yearly. In other words, while the agriculturist "turns" his capital stock over once a year the great London or New York tradesman "turns" his over twice.

By a parity of reasoning, the banker or broker whose profits on each transaction may be so small as one-sixty-fourth part of one per cent. must, "to make it pay," turn his capital over once a day.

It will be seen from these examples that no matter how numerous and diversified the exchanges are, they can all be brought to one denomination of frequency. When thus reduced it will be found that competition has brought them all to the same level of net profit.

The following hypothetical table will show more clearly the relation between frequency of exchange and rates of profit :—

Class of Exchanges.	Absolute number of exchanges.	Net customary rate of profit per cent. on each exchange.	Absolute exchanges reduced to annual ones.	Net annual rate of profit per cent.
Decennial	$6\frac{1}{4}$ at	32.00 equal	100 at	2.00
Yearly	25 ,,	8.00 ,,	100 ,,	2.00
Half-yearly ...	100 ,,	2.00 ,,	100 ,,	2.00
Monthly	400 ,,	0.50 ,,	100 ,,	2.00
Weekly.....	2000 ,,	0.10 ,,	100 ,,	2.00
Daily	20000 ,,	0.01 ,,	100 ,,	2.00
Hourly	200000 ,,	0.001 ,,	100 ,,	2.00

Investigations which have been made to determine the average net annual rate of profit on exchanges of capital in various countries and at various periods of time prove that such rate alters very slowly. For example, the total capital of the United States augmented a century ago at the rate of about 4 per cent. per annum. At the present time it augments at the rate of about $3\frac{1}{3}$ per cent. per annum. It is this rate that governs and marks the average net annual rate of profit on exchanges: it being clear that if it paid better to exchange capital than to produce it there would temporarily be such an overplus of merchants or brokers as would soon drive the excess to become agriculturists, miners, or manufacturers.

When similar investigations are made into the average rates of profit earned by the exchanges of any given class of capital in any important commercial centre—such as London or New York—during the past fifty or one hundred years, it will be found that these rates have varied but little, if at all. Notwithstanding the modifications in our mode of living, in the conditions of production, and in the facilities of transportation, exchange, etc., which have been effected through the introduction of steam power and telegraphs, the profits, severally, of husbandry, cattle-raising, manufacturing, mining, and commerce, both wholesale and retail, appear to be little different from what they were half a century or a century ago. It is not contended that these average customary rates of profit do not change at all: it is merely argued that they change with extreme slowness and by imperceptible degrees.

From these premises it appears that if the average net rate at which all the capital of a country augments can be determined, there may be deduced from it not only the rate at which any portion (not form) of such capital augments, but also the rate at which reduced exchanges increase.

There are two methods by which the rate at which the capital of a country augments can be determined: the one is inductive, the other deductive.

The former method is that pursued by the United States Census Bureau, which every tenth year computes the total wealth or capital [1] of the country in real and personal estate. From the decennial rate of increment to this wealth or capital, which is shown by comparing the results of one "census" with another, the annual rate may be readily computed. Unfortunately for the interests of science, the manner in which this work is performed, and the spirit that animates it, render it of little worth.[2]

[1] In the United States there is very little wealth not applied to reproduction: consequently in that country wealth and capital are nearly synonymous terms.

[2] The value of real property given in the census is the sum of the land tax lists in the various States. As the relation of taxable to actual value differs enormously, not only in the various States, but in the counties and municipalities, this sum is erroneous. The value of personal property is obtained from similar sources, partly from the declarations of persons interested in concealing or exaggerating the truth, and is wholly misleading. All deficiencies in the original returns—and they are exceedingly numerous—are made good by conjecture. No allowance is made for the different purchasing power of the moneys in which

The other method is the deductive. The rate of the growth of capital is unerringly indicated by the net rate of interest on money.

This rate differs, of course, in the various countries of the world.

In the United States it is about 3 per cent. per annum; in the United Kingdom it is about 2 per cent; in France it may not exceed one and a half per cent.; in Turkey it probably falls to zero.

If it is at this rate that the whole capital of a country augments, it is necessarily at the same rate that the sum of exchanges, when reduced to the same denomination of frequency, augments.

The net rate of interest not only differs in various countries; it differs in the same country in various eras. It was formerly 4 per cent. in the United States and $1\frac{3}{4}$ per cent. in the United Kingdom. Thus it has diminished in one country whilst it has increased in the other.[1]

And now, having shown the connection that exists between the augmentation of reduced exchanges and the rate of interest, the subject may be dismissed for the present, to be resumed in another chapter. A few words,

the results of the different censuses are summed up for comparison. Many of the items are destitute of any more solid foundation than partisan doctrine and design.

[1] For the causes that contribute to establish a given rate of interest, and which influence its variations, see the previous chapter, and the works therein cited.

however, may with advantage be devoted to the subject of unprofitable exchanges.

Besides exchanges which bear profits there is a class which do not bear any, and whose growth is therefore not indicated by the rate of net profit or the net rate of interest. This class of exchanges arises from sudden alterations in the volume and value of money.

"The decline that has sometimes taken place in the foreign demand for our products, and the revulsions thereby occasioned, have not been owing to their excessive supply, but to the pernicious influences of sudden changes in the value of money."[1]

For example suppose the money of country X to equal in round numbers 1,000 millions: if the banks or treasury of that country should suddenly put 50 millions more money in circulation—which in view of what has actually happened within recent years is not a violent supposition[2]—it would follow that the general level of prices would, either immediately or ultimately, be enhanced 5 per cent. This new level of prices renders it profitable for another country, Z, to ship 100 millions worth of goods to X, which previously would not have paid a profit to "market" in that country. The equivalent of these goods in gold or silver, or any other material of which the money

[1] McCulloch's "Political Economy," ed. 1849, p. 302.

[2] During the "Black-Friday" panic of 1873, the New York Clearing House and United States Treasury, combined, suddenly increased the money of the country to the extent of thirty million dollars. "History of Precious Metals," p. 217.

of X and Z may be made, being sent to the latter country occasions a fall of prices in X and rise in Z; so that it may now pay a profit to send the same goods back to Z for sale; and such an operation might be repeated again and again until the charges for transportation eat up the last morsel of profit.

Of course it is obvious that this profit, however real it may be to the merchants occupied in such a senseless carrying of goods up and down the earth, is wholly illusory to the respective countries X and Z. It arises simply from an alternate use of a common portion of two measures of value which the laws of two different countries have unwisely made of the same material—not merely of the same kind of material, but the same pieces of material. A similar class of unprofitable exchanges sometimes arises from the local supply of money within a country; but it is the former class—consisting not only of goods, but still more largely in the arbitrages of the bond and share markets—that contribute most powerfully to swell the figures of the clearing-houses. They arise simply from fluctuations in the volume of money operating upon prices within a given country, as contrasted with prices in another. Those numerous exchanges of the bond and share markets which arise from speculation are of an entirely different character.

In the case of unprofitable exchanges of goods, capital is wasted in payments for useless transportation, whether of corn, cotton, bonds, or shares. Another waste is in commissions to brokers. There is no real profit to mankind

in such transactions. The exact amount gained by one country or party is lost by the other; whilst the cost of transportation or charges for brokerage—as the case may be—form a tax upon both.

Whilst a scientifically regulated money would tend to increase the number of exchanges, including those which arise from the legitimate speculations of the produce and share markets, it would entirely put an end to the class of unprofitable exchanges described.

There is a class of commercial transactions which appear to be exchanges, but are not so: they are simply removals of capital from one place to another. A has made a fortune in India, and wishing to spend it in England, ships his money or goods from one country to the other. This shipment appears in the exports of India and the imports of England, and is therefore commonly regarded as an exchange, whilst, in point of fact, it is not one. B, living in Russia, bequeaths an estate to C, in France. As a consequence, money or goods pass between these countries; but no actual exchange has taken place. D, of New Orleans, espouses E, of New York, and the married couple go to live in California, taking their common fortune with them. Goods and money pass from the former places to the latter, but no exchange has happened. F, in Germany, lends a million to G, in America, and receives annually a sum of interest upon his loan. This is not a case of trade or exchange. J, of Connecticut, has invented a sewing machine which he has patented in England, and upon the use of which

in that country he receives a royalty in money or goods. This is no exchange.

However important this class of so-called exchanges may seem, they fail to exercise any practical bearing upon the efficiency of a given money to measure value in a given country.

CHAPTER XII.

REGULATION OF MONEYS.

Fluctuations of price which do not belong to the domain of science —Variations which do—Practical considerations for the regulation of money—Effect in the United States of an absolutely fixed sum—Influence of a fixed sum per capita of population—Actual movement of population and money during the past century—Had money been regulated instead of being left to commerce, chance, and political contention, the great panics of 1815, 1821, 1837, 1861, and 1870 might have been averted.

BESIDES those changes in the general Level of Prices which arise from changes in the whole Sum of Money, there is a subsidiary and partial movement of prices—a change in the prices of certain things, not of all things—which arises from war, legislation, speculation, foreign commerce, fashion, the chances of mining discovery, good and bad harvests, the progress of mechanical invention "over-production,"[1] and other causes.

These influences directly affect value, whilst money only affects price; these influences, whether separately or combined, may only affect the value of some things, they cannot affect that of all; whilst money cannot affect any without

[1] There can only be a permanent over-production of two commodities: improved lands and the precious metals. See "History of the Precious Metals," pp. 226, 275.

affecting every one. With the fluctuations of value occasioned by the various causes above set forth, the Science of Money has no concern; they belong to the domain of Commerce.

When money consists, as it does now, partly of a commodity—let us say gold, made into coins—and partly of notes, whether convertible or not, and its Sum is liable to be affected by the commercial or political supply and demand for gold metal, the relation of the gold to other commodities, and consequently its value in commodities, becomes of a dual character. As coins, its value is determined by the numerical proportion which such coins bear to the exchanges of all commodities and services, omitting the gold so coined. As bullion its value is due to the circumstances of its acquisition.

This dual character of commodity-money, and all the complex relations which flow from it, belong also to commerce. Science may try to reduce them to order; but the task will be a fruitless one.

Apart from these considerations, the relation of money to price must always be a general one. Money can promote a general rise of prices; it can occasion a general fall of prices; it can cause prices generally to remain fixed at a given level; but upon the subsidiary movement of prices money has no influence whatever, save what influence arises from the phenomenon of Precession.

In making an effort to decide in what manner the sum of money may best be regulated, we are met by the gravest difficulties; for money is not, like other measures, made to

determine relations of unvarying dimensions; it is designed to determine one whose dimensions tend continually to vary. Value, the relation to be determined, varies continually with the volume of exchanges, and these with the growth of population, the extension of commerce, and the march of civilisation.

In the United States, if money be regulated and limited to an Absolutely fixed sum, there would ensue a general fall of prices, because the sum of commodities and services to be exchanged therein within a given period—and whose value is to be expressed in money—is continually increasing.

If money in the United States were limited to a fixed sum Relative to Population, there would also ensue a fall of prices, although such fall would be far less great or rapid than in the case of an Absolutely fixed sum of money. The fall in the case of a Relatively (to population) fixed sum of money would be due to the fact that capital and exchanges in the United States increase somewhat faster than population.

If we consult the history of money in the United States, and endeavour to learn if the whole sum of money has actually conformed to any other determinable quantity, we shall find that the determinable quantity to which it has conformed most nearly is that of population. This is not to say that it has kept pace with population, or only kept pace with it; but that the average rate of its augmentation appears to have borne a definite numerical relation to the augmentation of population. Thus the population of the United States has increased during the past century at the rate of about three per cent., or thirty per mille per

annum compounded. The money of the United States, though not without frequent and injurious, if not dangerous, fluctuations, appears to have augmented at the rate of about thirty-three per mille per annum.[1]

Another determinable quantity to which the actual increase of money appears to have conformed is the net rate of interest for money. This quantity is not so readily nor easily determinable as the increase of population; nevertheless it is determinable. The net rate of interest means the average actual or market rate of interest, less risk, taxes, and the cost of the superintendence of loans. This rate in the United States has been and is still about thirty-three per mille per annum.

Without as yet assuming that these indications offer a practical solution to so difficult a problem, let it be supposed that the money of the United States, instead of being left, as it has been, to alternately expand or contract with the commercial movements of bullion, the paper emissions of banks and treasuries, the exigencies of governments, and the contentions of party, had been regulated to augment at the rate of thirty-three per mille per annum—then these results would have followed :—

1. The country would have had, all along, substantially the same amount of money that it has had; only, instead of alternately increasing and diminishing, in some years to more than half the extent of its previous volume, it would have augmented steadily at the rate of $3\frac{1}{3}$ per cent. per annum.

[1] Consult the author's "History of Precious Metals," pp. 214-17.

2. The reckless inflations, speculations, and dishonest transactions of 1814, 1819, 1829, 1837, 1857, and 1864 would not have occurred.

3. The contractions and stringencies that followed these eras would not have been occasioned.

4. Nor would it have been necessary to legalise the disgraceful repudiations, nor to pass the stay-laws and bankruptcy Acts which were enacted to relieve the distresses occasioned by these contractions, and into which innocent and honourable men were drawn, together with the designing and dishonourable.

Though the character of these advantages does not rank them among the most important which such a system would have brought about, yet surely even these are worthy of attention. To secure to each class of persons in a state the uninterrupted and peaceful enjoyment of their industrial condition, should certainly form an object of desire to statesmen. To discourage recklessness or dishonesty; to visit upon the labouring and indebted classes no unnecessary nor peculiar hardships; to incur no reproach of pecuniary turpitude; to hold out no inducements to fraudulent bankrupts; to let no rascal through meshes of the law which are strong enough to bind the innocent,—these are ends which no progressive community can long afford to disregard or neglect.

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